NOVEMBER 1961

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TECHNOLOGY
DEPARTMENT

THE PAPER INDUSTRY

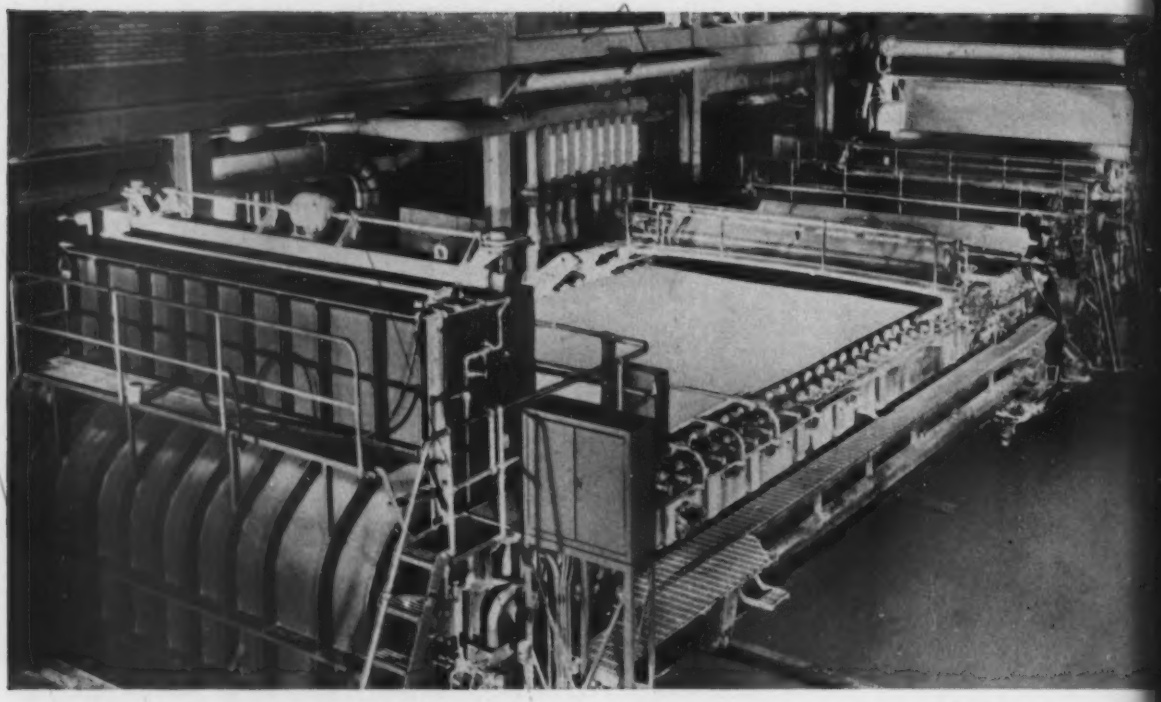
Cold soda pulping for corrugating medium

U. S. Gypsum receives Fritz trophy

Description of Black-Clawson's Verti-Forma

Bonus payments and tax regulations

Publishers of PAPER AND PULP MILL CATALOGUE



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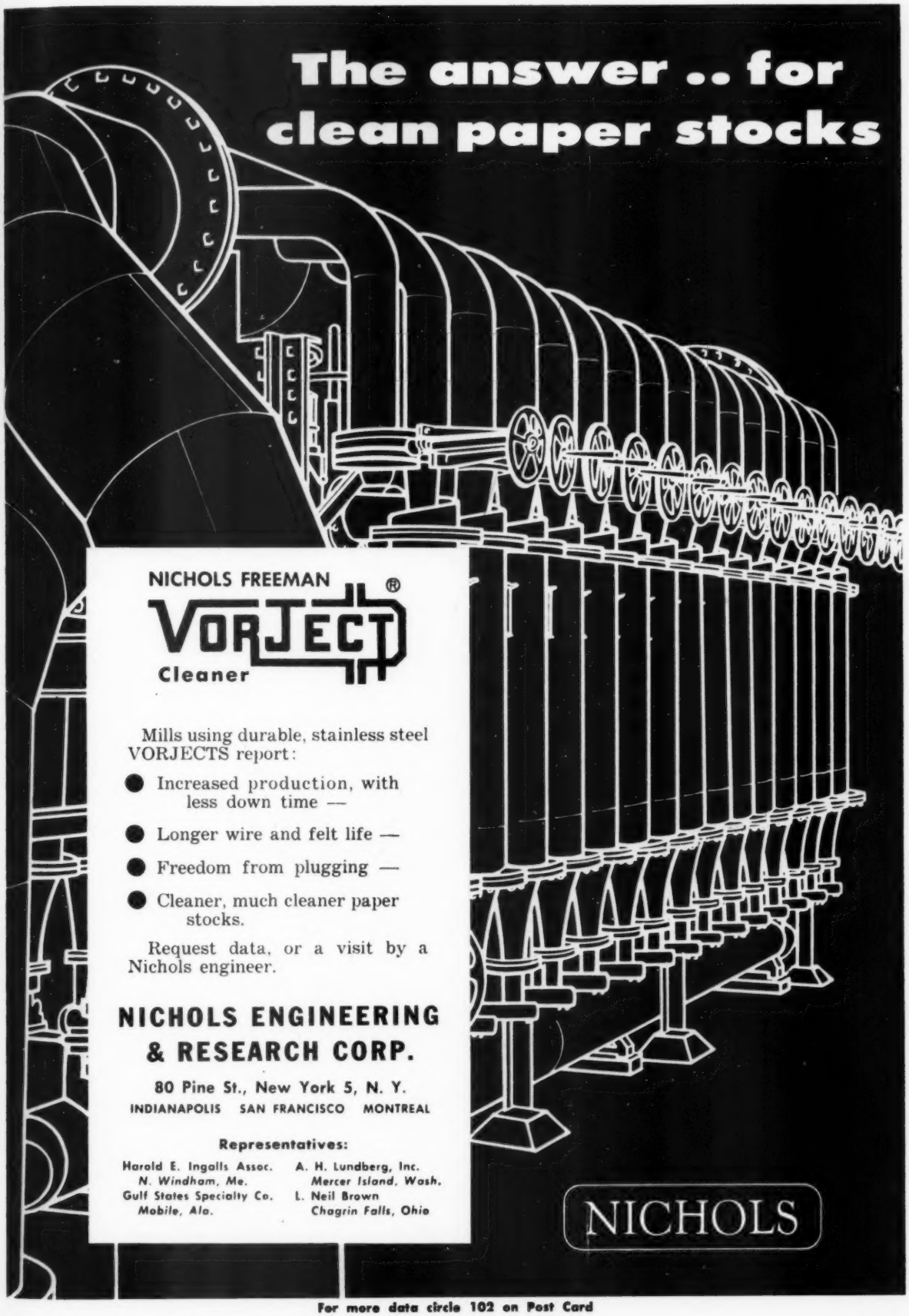

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It is no longer a secret that the Johnson Rotary Syphon represents an important breakthrough in draining condensate from dryer rolls of paper machines. A new concept of pick-up design holds condensate film to a minimum, for optimum transfer of heat units to dryer shell. Better drainage helps reduce horsepower demand; eases bearing wear caused by prolonged "cascading"; cuts maintenance all along the line.

Ease of installation is a welcome feature. The Johnson Rotary Syphon can be inserted right through the manhole; there's no need to get inside, no internal drilling or tapping. There's even a journal-inserted syphon for dryers with handholes only. The Rotary Syphon can be installed anywhere along the face of the dryer shell.

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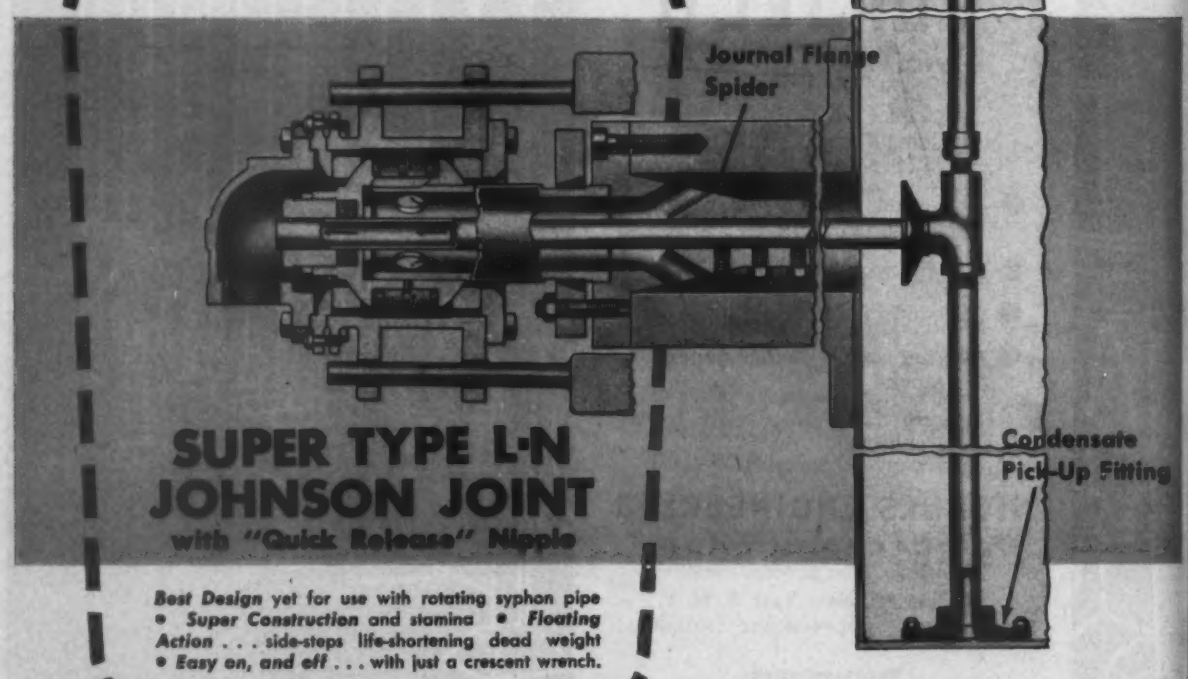

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FRONT COVER — E. M. Hazzard (right) receives Fritz Trophy from A. Scott Dowd, president, Fritz Publications, Inc. See page 509

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from our point of view

There is no substitute for knowledge

"While the old saying that there is no substitute for experience is still valid, it is often more significant that there is no substitute for knowledge", said George M. Muschamp, vice president-engineering for Honeywell's Industrial Products group, at a regional conference of the American Institute of Electrical Engineers.

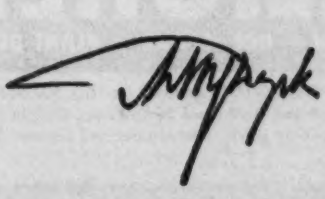
By drawing attention to this quotation, we are not attempting to minimize the importance of experience. However, by overemphasizing the need for experience in qualifications for job-specifications there is the danger of overlooking the fact that the true value of an experience is in direct proportion to the degrees of knowledge a person possesses of the things he is experiencing.

Knowledge, of course, is often acquired in the process of undergoing an experience and, if so, the experience becomes one of the most valuable factors contributing to the proficiency of the person concerned. On the other hand, it is also possible to have years and years of experience in a certain area of endeavor without deriving the maximum benefit from it, solely due to failure to appreciate or understand the nature or impact of such an experience.

It all boils down to the question of how one experiences an experience. If one does so with knowledge, which also contributes to increased powers of observation, the benefits are clear and decisive. If one does so without a true understanding of the factors involved, the experience is largely wasted.

It is for these reasons that there is need for industry to devise and implement more effective methods of personnel training. It should be possible — through intelligent analysis of the main factors affecting performance — to instill into the company's personnel a cumulative and concentrated form of job-experience that, if left to the personnel's own resources, would take them years and years to acquire through experience.

To remain competitive on world markets, U. S. industry will be under continuous pressure to keep the cost of its products down. This cannot be done without an effective program of continuous upgrading of industry personnel through the acquisition of new knowledge and more specific skills.



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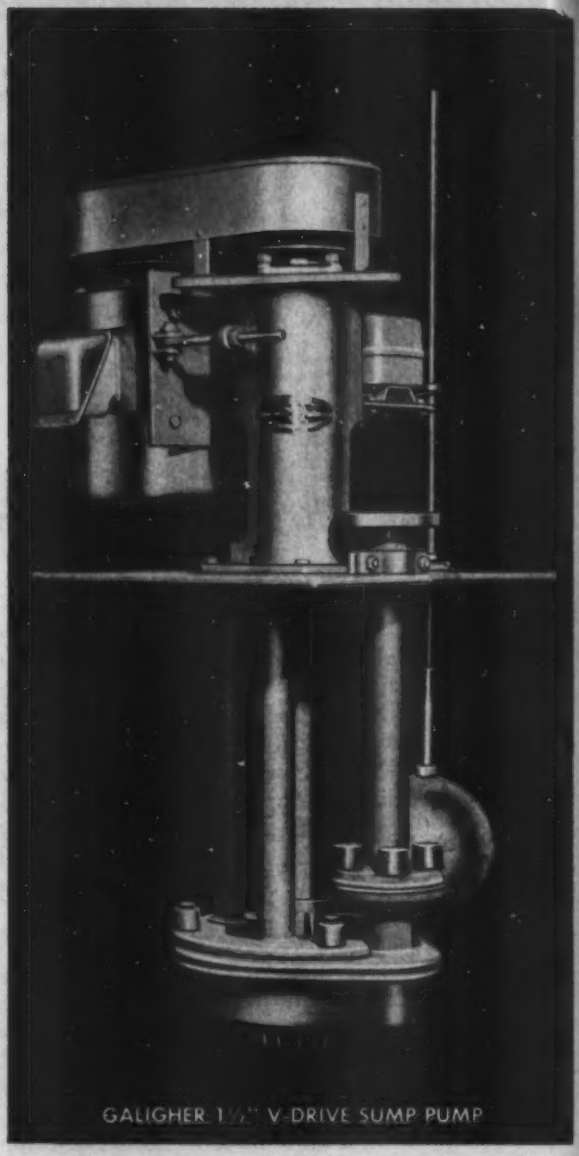

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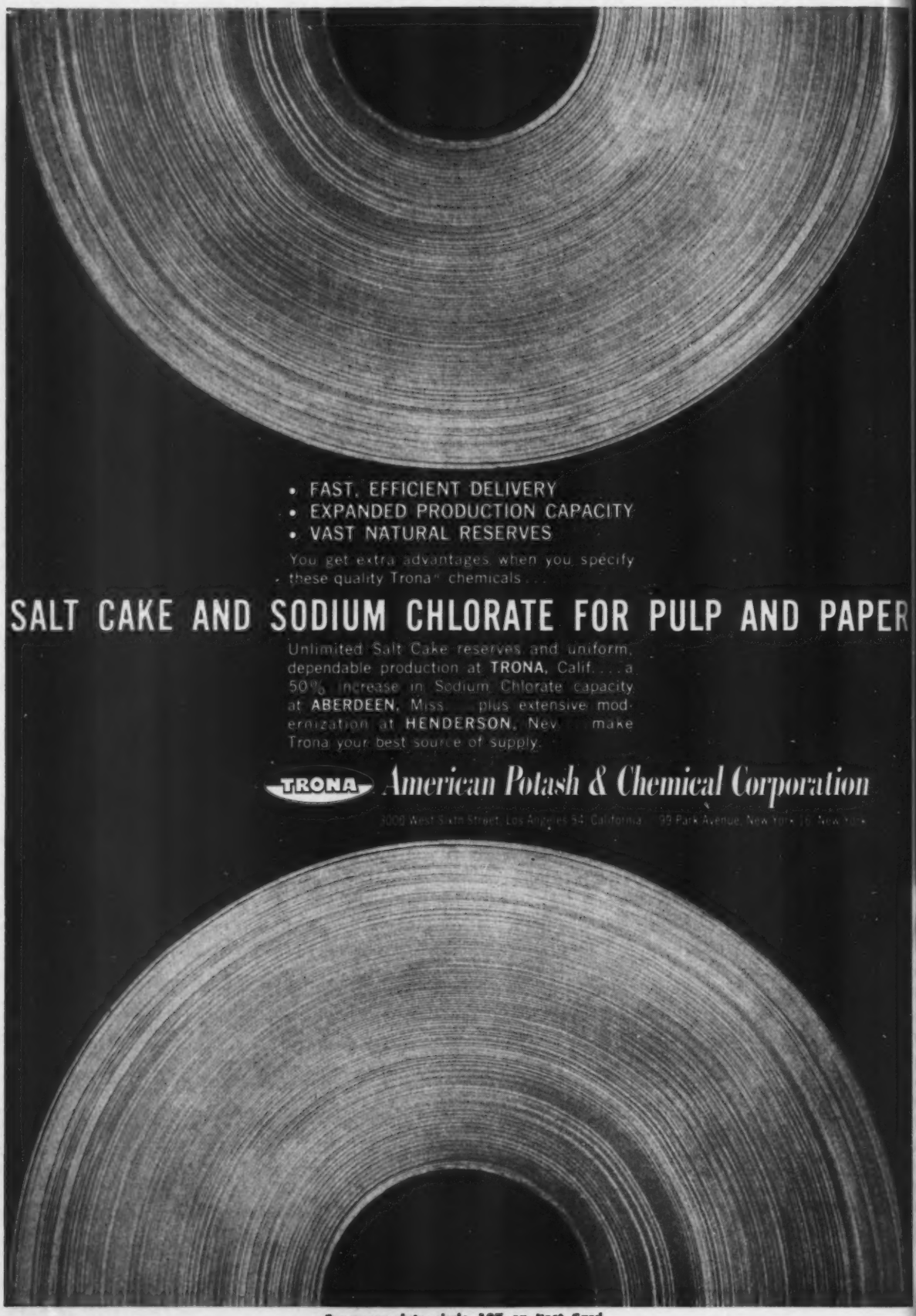
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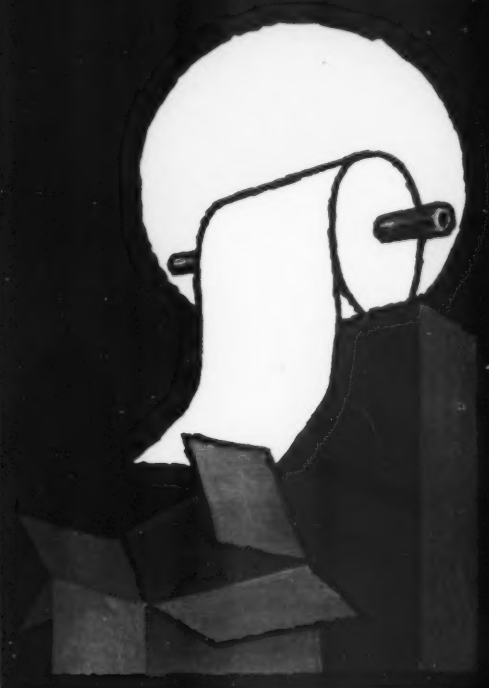

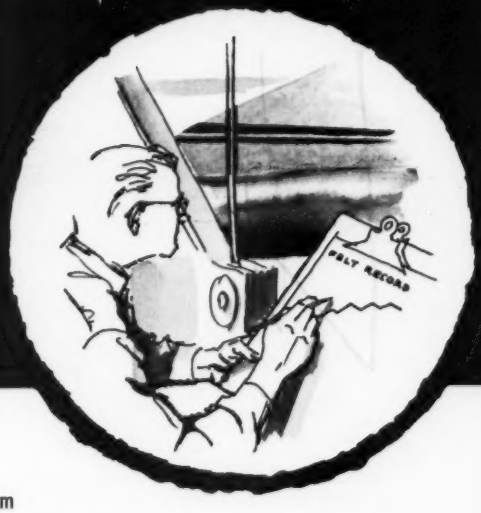

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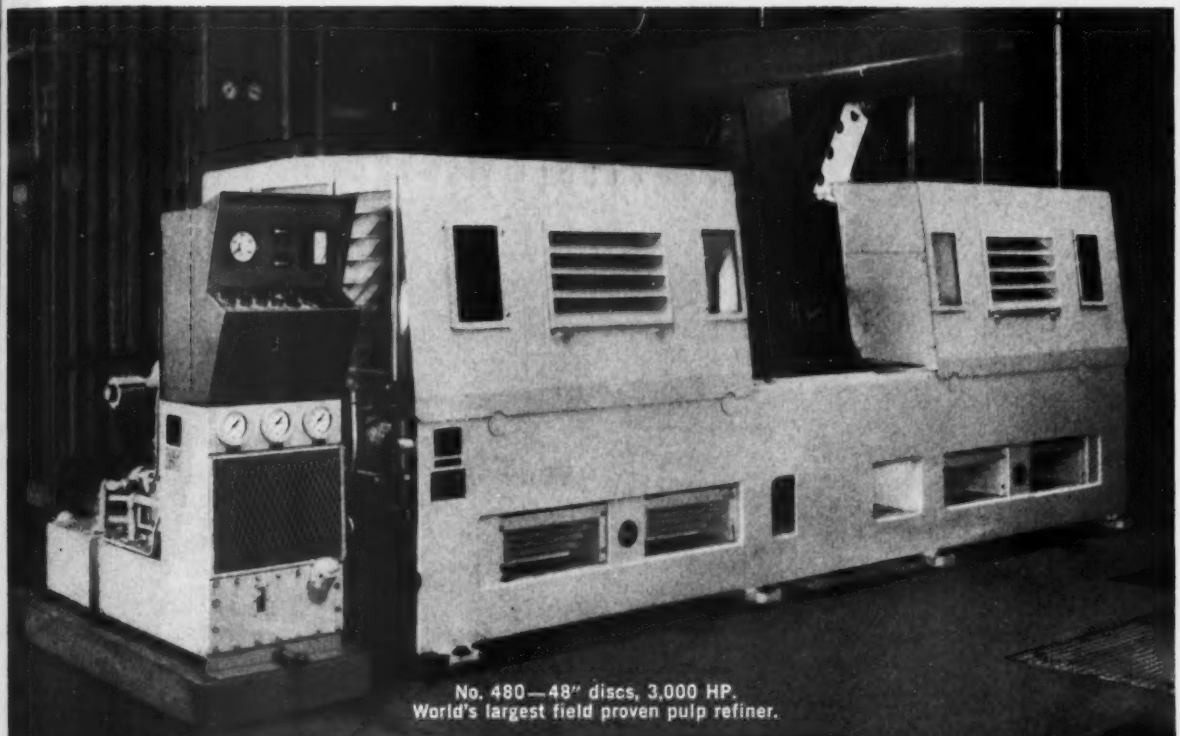

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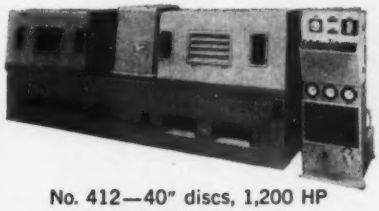

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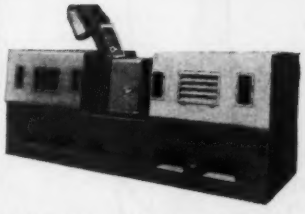

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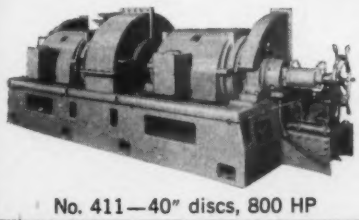

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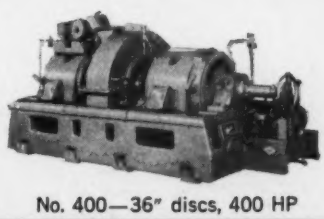

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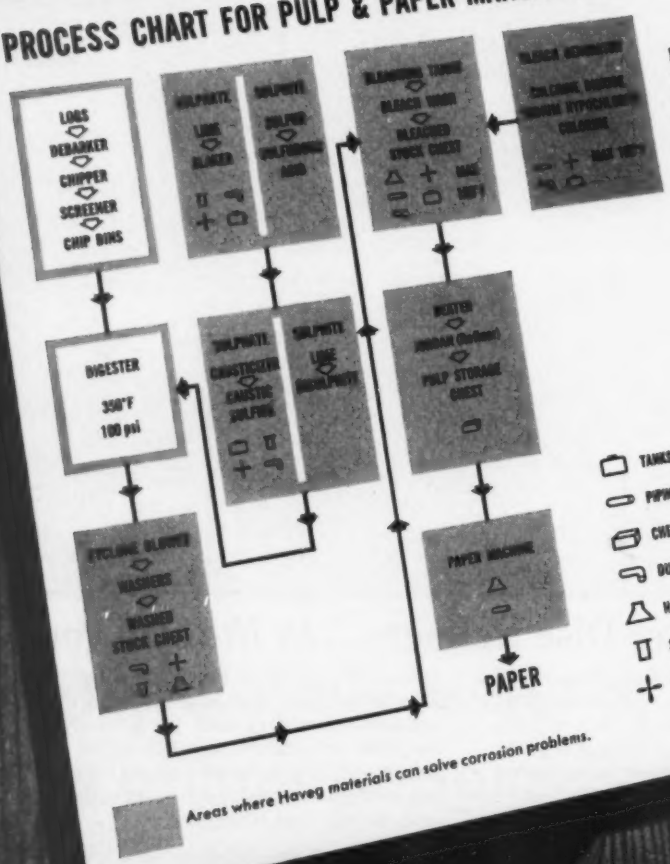

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U. S. GYPSUM COMPANY RECEIVES FRITZ TROPHY

THE SOUTH GATE, Calif., plant of U.S. Gypsum Co. was this year's winner of the Edward Benton Fritz Memorial Trophy. This trophy is is presented annually by Fritz Publications Inc., publisher of THE PAPER INDUSTRY, to give national recognition to that mill which—in the opinion of the judges—has made the most outstanding record during the preceding contest year. Shown below is a 13-year account of the company's progress.

Year	Hours of Exposure	Lost Time	Frequency
1948	1,025,190	11	10.73
1949	775,554	5	6.45
1950	914,132	4	4.38
1951	861,195	6	6.97
1952	896,087	3	3.35
1953	692,839	7	10.10
1954	843,844	2	2.37
1955	883,227	2	2.26
1956	816,081	1	1.23
1957	736,506	1	1.35
1958	776,149	0	0
1959	736,508	0	0
1960	782,865	0	0

The progress shown on the safety record follows well in line with the step-by-step improvements made during the last 13 years in building an effective safety program at South Gate.

It was in 1948 when South Gate began to take serious measures to construct a more sound program in accident prevention. Al Hazzard was appointed to the responsibility of personnel and safety director for the South Gate Plant during that year—a position which he still holds.

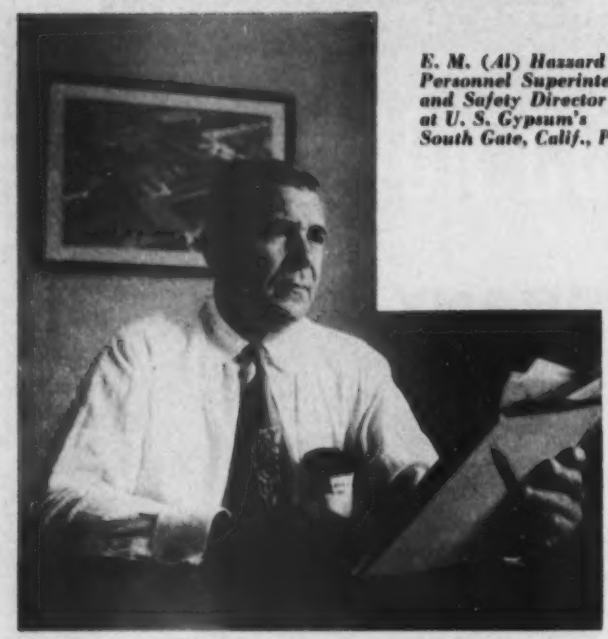
Although basic requirements for a safety program had been set up by the home office, Hazzard found that many of these were not being carried out in full. Attention was given first to fundamental portions of the program such as: safety meetings; safety contacts; safety inspections; employee and supervisory safety training; and off-the-job accident prevention.

Safety meetings of approximately one hour per meeting per month were set up as a requirement for every department and shift group in the plant. These meetings were made effective by counseling with supervisors and supplying visual aids as well as other materials for the meetings.

Safety contacts, another part of the campany-wide program, now became intensified. Each supervisor was required to contact each employee under his direction, a specific number of times per month. Supervisors were supplied with forms and a list of numerous subjects which could be used during these contacts—This list also prevented the supervisor from repeating the same subject too often with the same employee. The subjects discussed during these contacts are written up by the supervisor in a Weekly Condition Letter. Hazzard stated that this is one of the most important parts of the entire program.

Other parts of the program were enforced such as: inspection of equipment condition; unsafe acts;

Left — New hazard areas found during inspections are tagged with a magnetic-based yellow flag. The unsafe condition is written on an attached tag to warn workers until the danger is eliminated. Right —Employee demonstrating the use of eye-wash fountains which are made available for immediate treatment in cleaning of eyes which have been harmed by chemicals or dirt.



E. M. (Al) Hazzard Personnel Superintendent and Safety Director at U. S. Gypsum's South Gate, Calif., Plant.

Above — Personalized fitting of safety shoes is provided for employee as part of the 100 Per Cent Foot Protection Program. Company's own stock of safety shoes are available. Below — Employees reviewing procedure for starting pump motor. Instructions are placed in full view on machine.

and personal safety clothing.

Further training on accident prevention was given to the supervisors. The "Lateiner Method for Accident Control for Supervisors" was presented and has been repeated. Other educational programs were set up for both supervisors and employees which included visual aids on accident prevention for on-the-job and off-the-job safety. A library containing publications on safety and accident prevention is available to all supervisors.

As the basic accident prevention program continued to build, other programs were added. In 1958 a 100 per cent Foot Protection Program was established. Stock safety shoes were placed in the company's storeroom for employee convenience. The financial picture was eased for the employee by setting up a payroll deduction plan. Hazzard stated that since the establishment of this program, no foot injuries have been reported. The success of this program led to the organization of a 100 per cent Eye Protection Program in 1960. This program is managed somewhat as the Foot Protection Program.

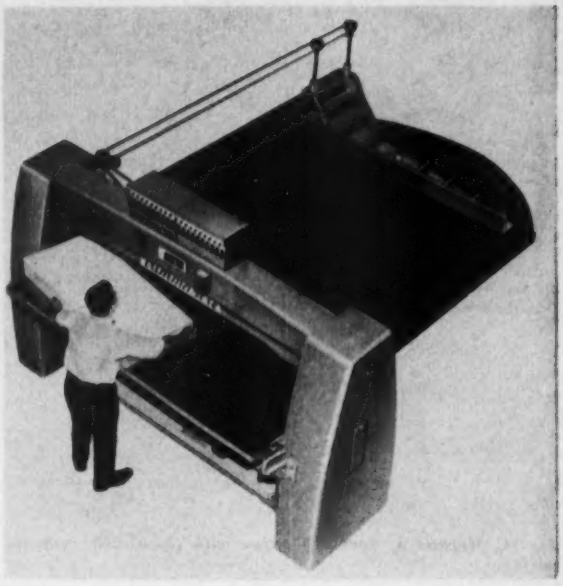
Many devices to reward good safety performance are being used at South Gate. Dinners have been given to employee groups who have completed five years, or completed over 500,000 manhours since the last lost-time accident. At the completion of each million manhour period without a lost-time accident, safety meetings are held and coffee and doughnuts are served to each employee group in the plant. In each issue of the company's publication, a portion is devoted to safety. Here, pictures of employees depicting the subject or method that they have developed concerning safety are presented.

The progressive attitude taken by both management and employees in building a successful program at South Gate has resulted in a very fine record of "Safe Manhours".

Left — When more than one man is working on the same piece of equipment, each man can lock out the power with his own lock. Equipment cannot be started until all locks are removed. Board shown here, serves as a check to show that all locks are returned at the end of the day. Right — A warning device to protect electricians from possible injury when they are working above floor level is used especially in heavily traveled areas.

MODERN TRIMMER SPEEDS FINISHING ROOM PRODUCTION*

FARHANG JAVID
President
Smith & Winchester Mfg. Co.



View of the completely automated "Trimmastre"

FINISHING rooms of today are not only recognizing the need of modern machinery and equipment to keep pace with the advance made in similar industries but are becoming increasingly aware of the importance of making better use of manhours. In the finishing room operation, present trimming practice requires a great number of manhours not only to load and unload the trimmer but also to operate the trimmer itself.

With the continuous rise in cost of finishing room operations, a trimmer should be completely automatic to permit maximum machine production and minimum manhour requirements.

The latest in new trimmers made by Smith & Winchester and known as "Trimmastre" trimmers offer complete automation, so that all cycling of the back gauge, loading and unloading and broke removal without the manual help of the operator is accomplished automatically. These trimmers substitute precision electronic equipment with its attendant accuracy, for the skill formerly supplied by the operator who now needs only to turn the ream and operate the knife.

"Trimmastre" trimmers are heavy duty mill type, 56 in. - 76 in. - 86 in. - 100 in., featuring a solid back table for ease of loading and unloading, "Spacemastre" electronic automatic spacer for precision cycling of the back gauge, "scissor action" automatic clamping which eliminates the need for hydraulic equipment and special accessories, and automatic broke removal, which allows the broke to fall instantly through an opening created by the knife action.

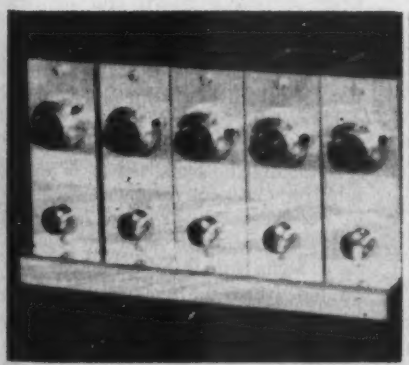
The solid back table is air cushioned. The back gauge is side operated. There is no slot in the center to interfere with the cutting operation. Side location on the machine, of tape and screw, and the solid back table permit automatic side or top loading.

The back gauge is designed with a built-in adjustment for squareness. The triangular-shaped back gauge rides on the back table and is guided by the side gauge, side bar and screw, insuring accuracy of cutting from end to end.

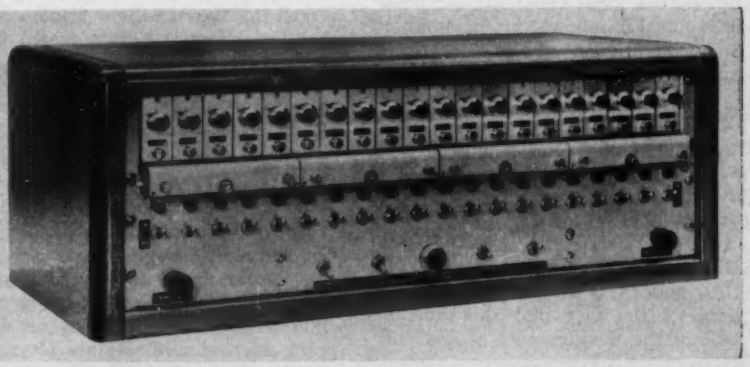
The "Spacemastre" electronic automatic spacer is completely transistorized to provide long life, greater reliability of circuit performance and decreased maintenance requirements. Although it automates the back gauge movement of the "Trimmastre" trimmer,

Continued on page 520

* Presented at the Empire State TAPPI Meeting, June, 1961.



Bank of fire range units for storing fire predetermined cut-sizes.



View of 20-position transistorized Master Programmer which permits several pre-set cutting sizes.

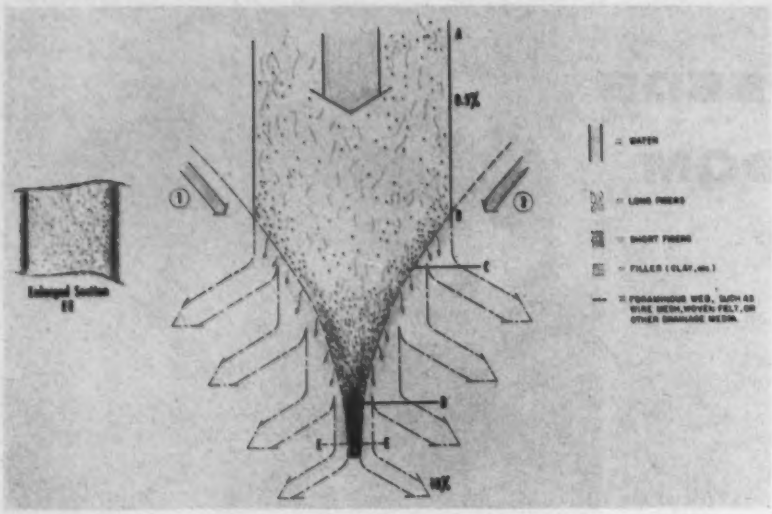


Fig. 1. Method of forming paper with identically opposed surfaces.

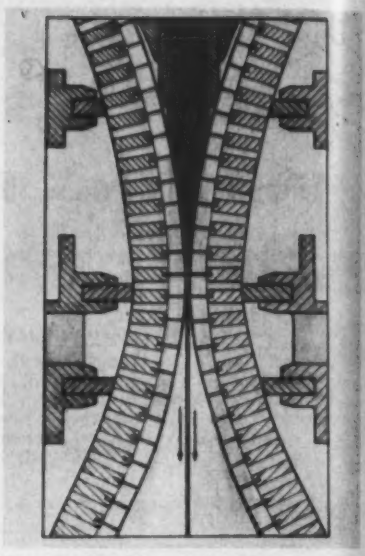


Fig. 2. Double suction breast rolls.

DEVELOPMENT PROGRESS WITH THE VERTI-FORMA*

W. S. CORBIN
Paper Machine Division
Black-Clawson Co.

THE VERTI-FORMA employs sheet forming principles heretofore unattempted. The classical procedures of water removal by gravity and combinations of gravity and suction, as employed on traditional fourdrinier and cylinder machines, are not adequate for future requirements of high speed operation. Acceptance of this fact and the need to examine the other machine characteristics, outlined in the following discussion, led Black-Clawson to believe that the Verti-Forma principles in one form or another might be the answer to sheet formation machinery of the future.

It is our intent to continue the development of the Verti-Forma type of forming device, and to install a prototype unit on a commercial scale within the next 24 months.

Frank Peterson, president of Black-Clawson Co., requests that this paper be interpreted in the light of the fact that this unit is still in the development stages and affirms that Black-Clawson will welcome observations or comments from the technicians and engineers in the industry interested in this type of development.

Background of development

This paper presents an informal outline and progress report on a new development in web formation on which the Black-Clawson Co. has been working for the past four years. The developments have successfully progressed from the theoretical to the practical application stage, yielding data from which the entire industry can benefit.

Our web forming unit, which we call the "Verti-Forma", is still in the laboratory development stage, even after four years of "blood, sweat and tears", backed up by a sizeable cash investment.

Black-Clawson's Research and Development Department, under Joe Baxter Jr., began searching in 1957 for a new sheet forming principle which would give us an end point, a sheet with certain physical characteristics that did not exist in sheets produced by standard methods at that time. These basic requirements were for a completely symmetrical sheet in all directions, having a uniform smooth surface on both sides with fines and filler on the surfaces and with the long fibers buried in the geometrical center of the sheet for physical stability. A sheet of this type would then require a minimum of surface coating for fine multi-color printing and would remain dimensionally stable during the printing operations to insure sharp and distinct color lines.

After considering these requirements, it was felt these specifications would be a distinct advantage, not only in printing papers but in most every class of paper.

Realizing the basic truths of these requirements, the problem was put in our research program and the following premise was developed as a basis for this equipment (as quoted from the write up of the original patent application):

"In order to secure a web having identical opposed surfaces, it is necessary that drainage take place

* Presented at the Empire State TAPPI Meeting, June, 1961

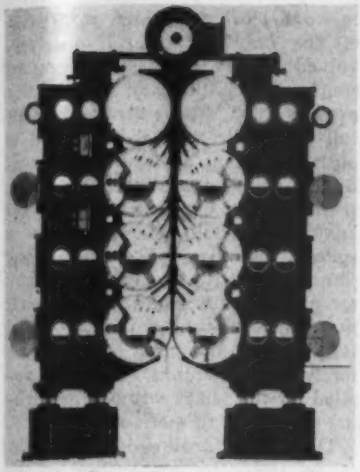


Fig. 3. Original concept of Verti-Forma.

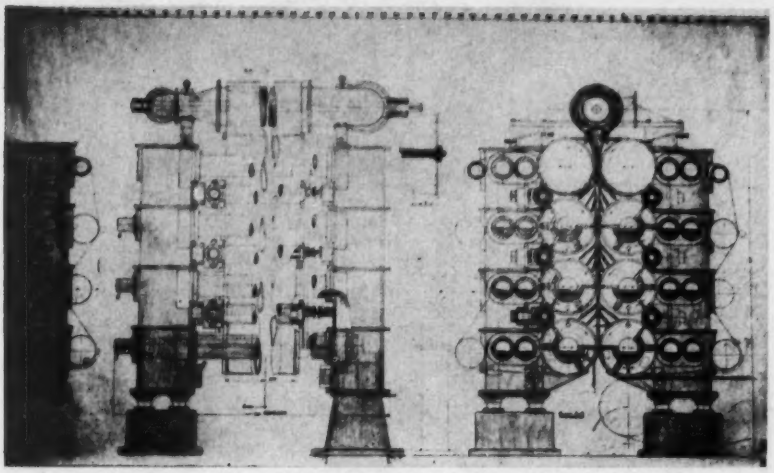


Fig. 4. Concept of Verti-Forma in front and side elevation.

from both surfaces simultaneously in identical amounts at points directly opposite. To the degree that drainage varies from one surface to the other, so the character of the sheet surfaces can be made to vary, thus providing a means of controlling deposit of the suspended constituents. These conditions therefore require that direction of travel of the forming web be vertical and moving from top to bottom to take full advantage of the properties of gravity.

As liquid is filtered from a fibrous slurry, the more minute suspensoids tend to migrate with the flow of the withdrawn liquid, followed in progressive order by the next larger particles and last of all by the largest suspended particles present. If these smallest particles are trapped at the surface of the filtering media by virtue of the openings therein being too small to permit their passage, a 'filter cake' will be formed, thus coating the filtering surface with the smallest particles and providing a filter mat on which remainder of suspensoids will be deposited as drainage progresses."

The longest and strongest fibers will be positioned in the geometric center of the sheet to insure resistance to curl and stabilize shrinkage during the changes in moisture content of the sheet.

Figure 1 shows in diagrammatical form the premise of this development as previously described. The center view shows the heterogeneous slurry as it might approach what could be called "the slice lips of a headbox". The curved area show the equal and opposite removal of the water carrier with the deposition of the concentrating solids in the slurry to form the desired sheet structure as shown in the enlarged section "E" of the left hand side. This section shows the ideal arrangement of the solids in the finished sheet with the filler and short fibers deposited equally on the two outside surfaces with the long fibers basically concentrated in the center of the sheet.

Figure 2 shows an obvious method of removing the water carrier equal and opposite in a lightweight sheet with a double suction breast roll. The big advantage of this arrangement over the present use of a single suction breast roll is the fact that double the amount of water carrier could be removed in the same time as with a single suction roll, no doubt with less disturbance to the fiber pattern as only half the water must be removed from each side.

Another advantage to this method might be the fact that when the sheet is deposited on a fourdrinier at speeds of between 2500 and 3000 fpm, which is done at the present time on sheets such as tissue and newsprint, there is a definite disturbance of the top of the sheet in relation to the bottom of the sheet when it strikes the still air surfaces above the sheet. With the Verti-Forma process, the sheet at no time comes in contact with anything but surfaces travelling at the desired speed of the sheet.

Figure 3 shows in outline form, the original concept of the Verti-Forma* machine from which the first prototype unit was designed and built following the laboratory stage of development. Basically, the unit consists of a new development in headbox design, based on a horizontal cross machine selectifier screen. The outlet from the collecting ring of the selectifier screen terminates into what would correspond to slice lips between two precision ground solid breast rolls. The sheet is deposited in a vertical direction between two vertical running restricting fourdinier wires whose path is defined in this downward travel by a series of suction rolls and deflectors until the sheet has been de-watered to a consistency equivalent to the sheet leaving a couch roll, at which time the sheet is peeled around one of the bottom suction rolls for deposition onto a felt section. Each suction roll would have a suction box, one lip of which would be on the contact point of the roll with the wire, and the other lip being on the contact point of the suction roll and a rubber sealing roll between the two suction rolls. Each opposite suction roll would have a control vacuum which might be different from the vacuum in succeeding rolls and would control the vacuum in the chamber between rolls. This vacuum created would control the differential pressure and, therefore, the rate of drainage of the sheet between rolls which could be controlled to give a uniform and continuous drainage as the sheet passed from the breast roll area to the bottom couch roll area.

In order to keep air from being aspirated into the first pass of the sheet between the solid breast rolls, the top chambers between the headbox and the top of the breast

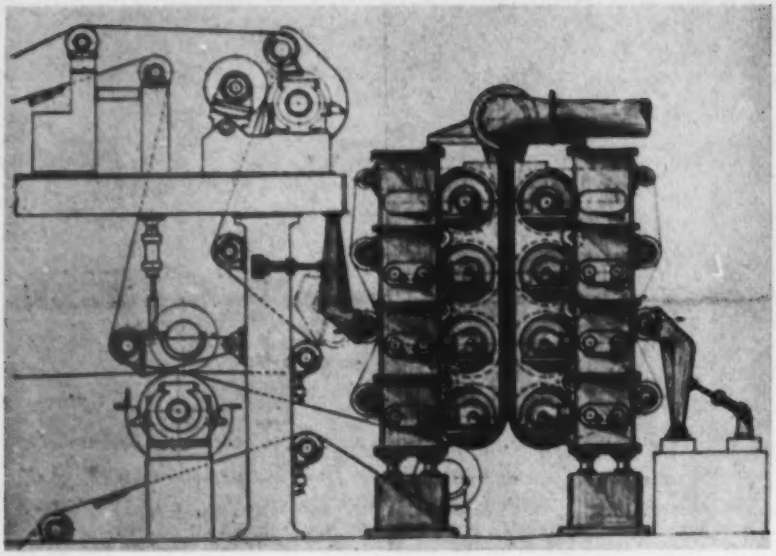


Fig. 5. Concept of Verti-Forma with its following press section.

rolls will be shielded and enough steam pressure added to these chambers to create a slight outward flow of the steam rather than an inward flow of the air around the wire into the nip. Any steam condensed in these chambers would go into the sheet as water without disturbing the overall flow.

It will be noted that at no time does the sheet come in contact with air or anything but the moving wire once it is desposited in the machine. Water would be removed from the slurry as it travels down the converging lines of the two fourdriniers, the same as water is removed from a soaked sponge by pressing it between the palm of two hands.

Figure 4 shows the concept of the Verti-Forma in front and side elevation. In order to keep this development on a practical side, certain things were considered in the ultimate design of the machine which would allow for commercial operation.

It is believed that in the final design of the machine, the unit would be very easy to maintain and reclothe.

The design is conceived in such a way that the half of the unit away from the press section would be permanently cantilevered from the back side the same as our present permanent cantilevered Hydroflyte fourdrinier so that hydraulic jacks on the front side of one section could be raised slightly in order to remove spacer blocks and then one-half of the unit would be swung open like a book to expose the surfaces area for either maintenance or re-clothing.

Figure 5 shows the concept of the Verti-Forma with its following press section. You will note that the sheet would be taken off of the bottom turn of the fourdrinier on the top surface of an under running felt for the first press. Here again, we are using the force of gravity to aid in this transfer and experimental results to date have indicated that this is going to be one of the easiest problems to solve in the entire project.

Figure 6 shows the basic arrangement of the present prototype machine. The previous figures show the concept of the Verti-Forma from which the first prototype machine was built.

Since then, two additional prototype machines have been built, each one actually simplifying the construction and giving more encouraging results.

Referring to Figure 5, it was found that suction rolls were actually not necessary in anything except the bottom rolls.

At high speeds and dilute consistencies encountered at the beginning of the formation, it was very difficult to actually get the solid water through the shell into the interior of the suction rolls.

As a result, a new unit was built with the suction roll compartments being replaced by just vacuum compartments with the wire supported on a series of wire supporting deflectors as shown in Figure 6. The only suction roll now involved in the unit is the bottom couch roll on the side next to the press section. The opposite bottom roll is a plain surfaced roll and is positioned some 18-in. below a suction turning couch roll. The last section above the suction couch roll has what would correspond to a suction flat box of the standard fourdrinier with no opposite counter part. At this point, it was found that the formation of the fibers had stabilized to the point where relatively high vacuum could be applied to the sheet without disturbing any of the formation.

The entire forming length on the model from the center line of the breast roll to the center line of the couch roll is only some 6 ft. and it has been found possible to run, the equivalent of a 30-lb. book paper at 1200 fpm, starting with a consistency of .5 per cent and taking the sheet off the couch at between 15 per cent and 17 per cent with at no time using more than a fraction of an inch of vacuum in the compartment, 2 in. Hg vacuum in the flat box and 3 in. of vacuum in the couch.

Also the results have indicated that the faster this unit runs, the less problems are involved. At speeds of 700 fpm and below, many problems existed which did not exist at speeds of from 1200 to 1500 fpm. Actually, speeds are contemplated on the final machine in the 5000-fpm range, in sheets in the 30-lb. classification.

As mentioned, the actual results on experimental runs have been encouraging to the point where the model is now being brought under more accurate controls as far as consistency regulations, fiber content, vacuum and speed controls.

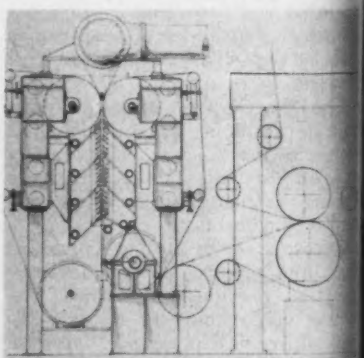
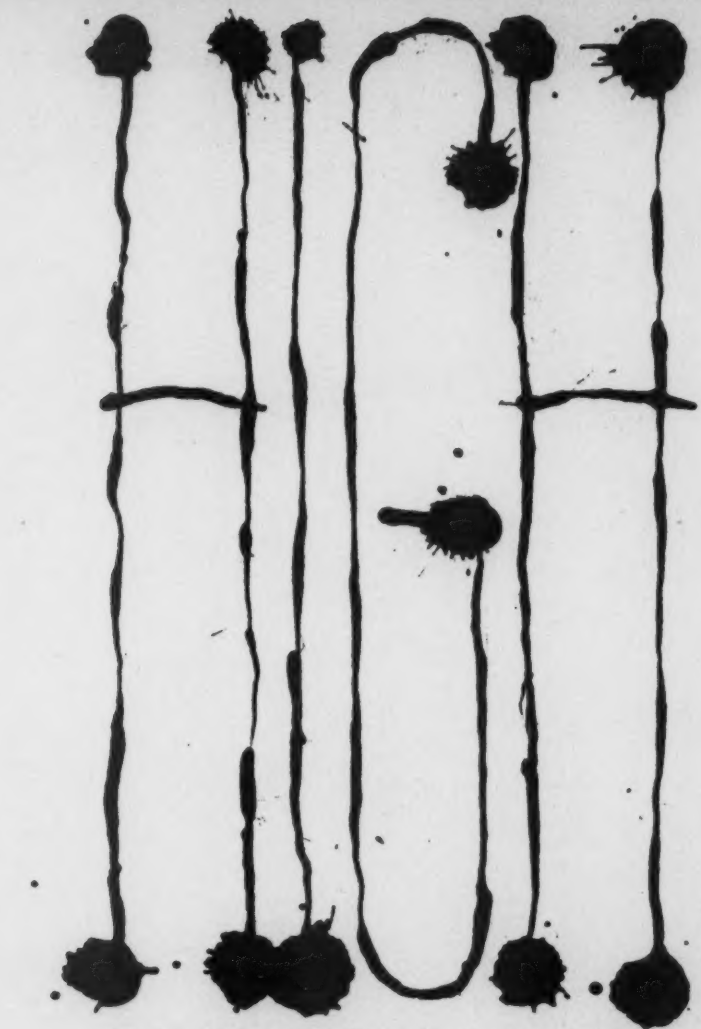


Fig. 6. Proposed layout of Verti-Forma with following take-off press section.



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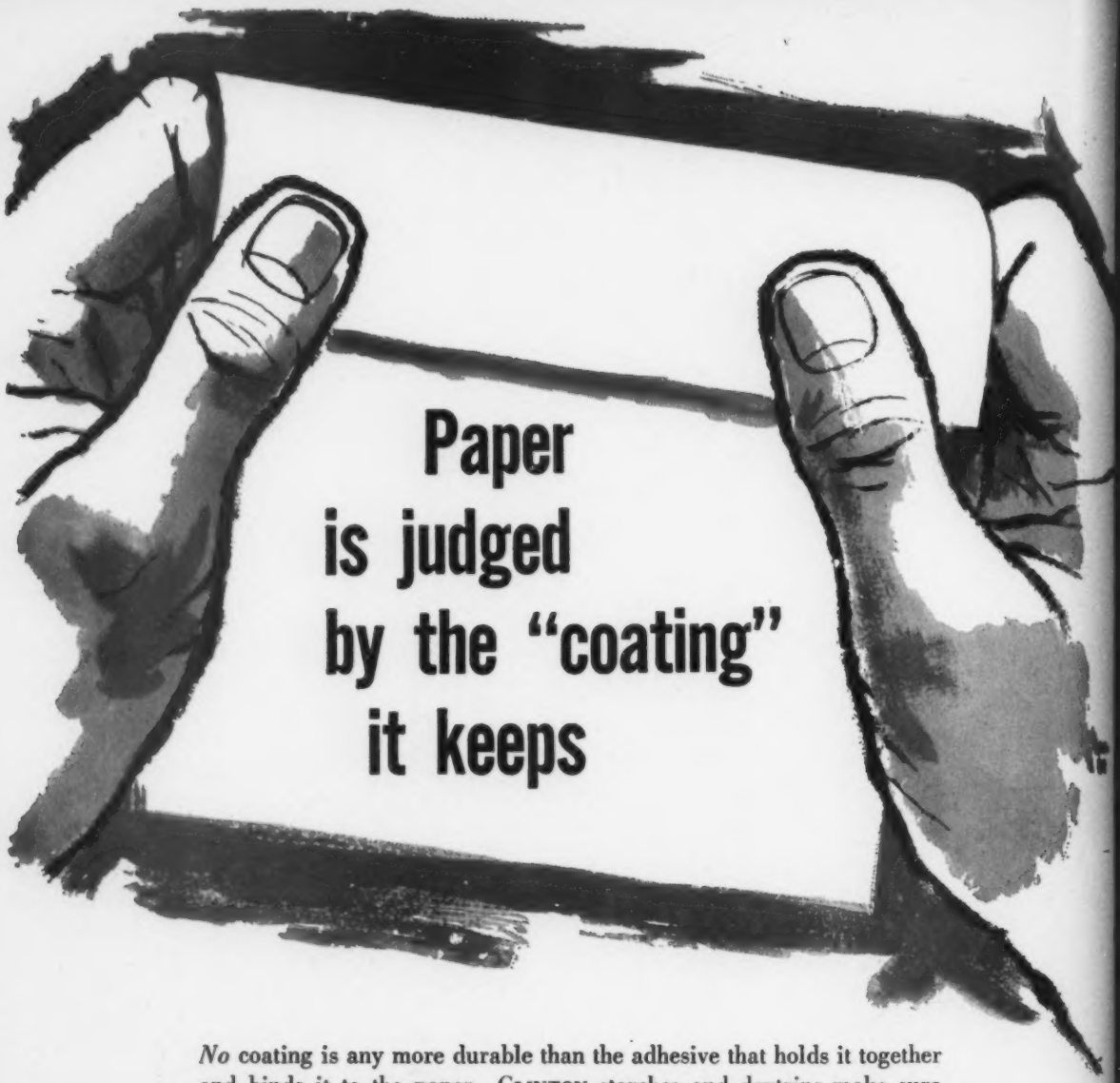

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COLD SODA PULP FOR CORRUGATING MEDIUM

J. O. NICHOLSON
Research Chemist
Stone Container Corp.

▶ Cold soda pulp has definite advantages for the manufacture of corrugating medium. Among these are economy, quality of product, simplicity of operation, and a low level of objectionable odors.

WHEN on May 12, 1959, plant superintendent J. P. Anderson of Stone Container Corp.'s Coshocton, Ohio, mill ordered a new chemical treatment for digestion of hardwood chips, he could not have known then that this was a pioneering move in a new and successful process for the manufacture of corrugating medium.

Subsequently this new application of the cold soda process proved so successful that within a year a huge expansion program to triple the daily production with the addition of a new 176-in. fourdrinier paper machine was underway. And the demonstrated advantages of the process — economy, quality of product, and simplicity of operation — have established it as a practical method for the manufacture of corrugating medium.

Raw materials used

The new approach was no accident, for it had been preceded by a year of carefully planned laboratory research closely correlated with production operations.

For many years, straw was the raw material from which fiber had been derived at the mill. But modern methods of harvesting had reduced the quality of straw until it became an unsatisfactory source. Straw was then succeeded by sawmill slabs, but the variable quality and difficulty of effective treatment suggested that this also was not an ideal source of high quality fiber for corrugating medium.

In the summer of 1958 the use of locally available mixed hardwood species cut as green roundwood was begun and has continued. And it was in the utilization of this source of quality fiber that most of the research was conducted.

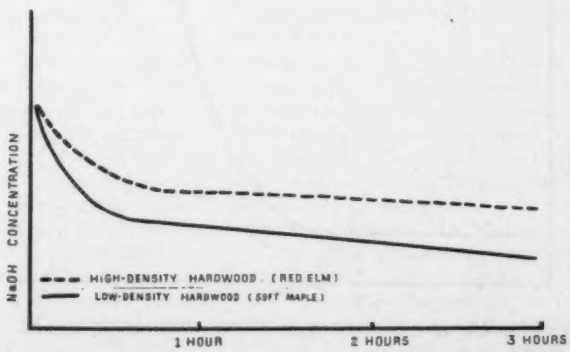
Temperature effect

Early in the research program it was discovered that the cold soda process, at least in relation to digestion of hardwood chips, is only a relative term, and that a latitude of at least 50°F. in digestion temperatures exists within which there is very little variation in rate of chemical reaction, effect upon chip penetration, pulp freeness, yield, and final quality of completed product.

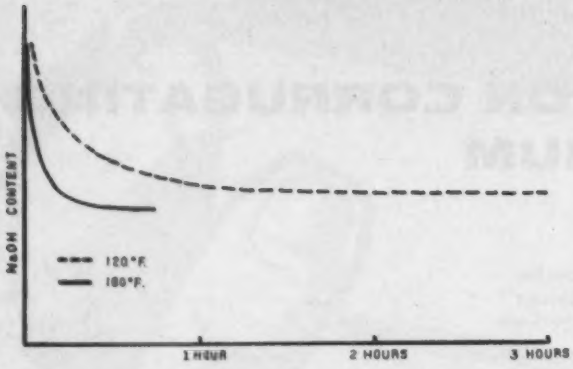
This fact, of course, does not agree with the conventional doubling of reaction speed with every increase of 10°C. But once the safe range is exceeded, reaction proceeds at an extremely accelerated rate. Penetration time for digestion of chips drops rapidly, pulp freeness rises abruptly, yield decreases, and the final product, while running well on the machine, assumes characteristics of kraft. The desirable crush-resistant quality of corrugating medium deteriorates. Furthermore, at elevated temperatures the consumption of sodium hydroxide is excessive.

Effect of sodium hydroxide concentration

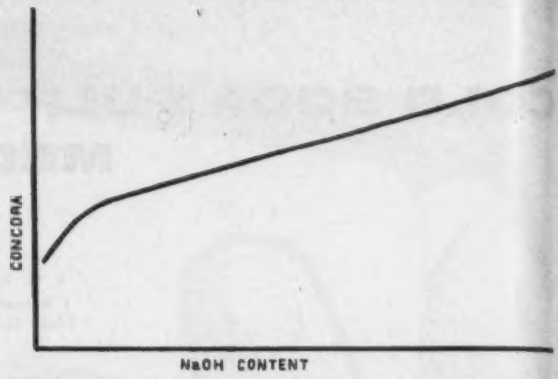
Since ionization of strong bases and acids is highest at relatively low concentrations, this principle suggested the lowest sodium hydroxide concentration possible that still contained sufficient chemical to effect thorough digestion of chips in the one-stage process. Investigation of the ionization activity of sodium hydroxide at varying levels indicated a concentration of less than 20 g. per liter as the one most highly reactive. This, however, was found to be an inadequate level of sodium hydroxide for best results, but did suggest a concentration as near that point as possible. This principle proved its application in the much better penetration of hardwood chips at the lowest pos-



Relative NaOH consumption by high-density and low-density hardwoods.



Relationship of temperature to rate of reaction.



Relationship of Concora to NaOH concentration between 0 and 8 g./liter.

sible effective level as compared to higher concentrations. And this was accomplished at atmospheric pressure and ordinary temperatures.

It was discovered that, at high concentrations of sodium hydroxide, the consumption of chemical increased over that of the lower concentrations along with yield for a given species, but the total effect was undesirable. So the lowest effective concentration for the result desired was established.

Effect of chip thickness, wood species and storage

Fractionation of mixed hardwood chips to a small thickness proved important. The length and width of an individual chip were found to be less important than the thickness, for under atmospheric pressure the chemical penetration rate is practically the same both transversely and longitudinally through the fibers.

Species of hardwoods vary considerably in their reaction with sodium hydroxide. While the low density hardwoods react more rapidly than do the dense species and can be digested effectively at lower chemical concentrations, the low density woods consume more chemical from the digestion liquor and produce a somewhat lower yield than do most of the denser hardwoods.

Storage duration of mixed hardwood pulp logs before digestion is an important factor. Certain species deteriorate more rapidly than others; and with practically all kinds, deterioration begins within a very few weeks after cutting. For maintaining uniformity and highest quality of the product, the procurement and usage program should provide for a storage of no longer than four months before consumption.

Pressing and refining

In the cold soda digestion of chips, chemical penetration of chips is not the only desirable reaction involved. Ideally speaking, the reaction should progress slightly beyond the complete penetration stage. This does not require a prolonged digestion time when chips are properly fractionated, when temperature is optimum, and chemical concentration is at the proper level.

Immediate refining of chips following digestion is desirable. For digested chips left to dry and cool in exposure to the air, for even 6 or 8 hr., can deteriorate considerably in ease of refining and resulting quality of the product.

The pressing of freshly digested chips before primary refining is important in the removal of excess digestion liquor and partial fiberization. Too great a pressure will remove too much of the residual liquor and may even result in damage to quality of fibers due to high temperatures. For high temperatures lower both the yield and

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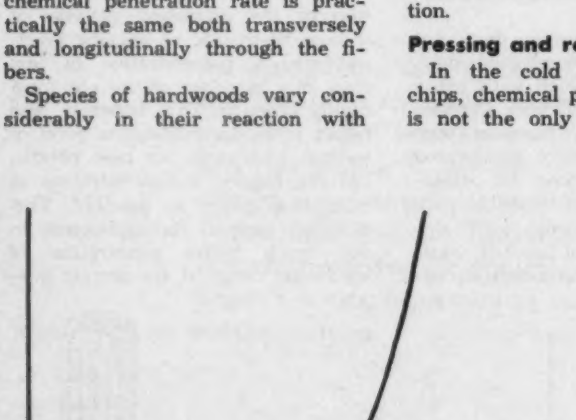
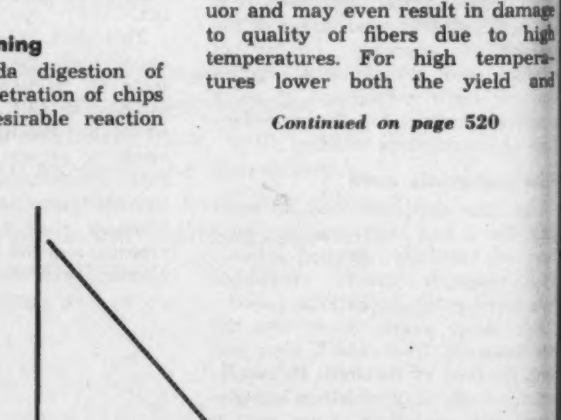


Relationship of freeness to temperature between 70°F. and 180°F.



Relationship of freeness to NaOH content between 0 g. to 6 g./liter of NaOH.

BONUS PAYMENTS AND TAX REGULATIONS

CHARLES C. MOFFATT

▶ A bonus program can increase sales and reduce costs; but make sure it will be allowed as a regular and necessary business expense — a tax deduction.

ONE of the most widely accepted ways to provide an incentive through extra compensation is with an employee bonus plan. Management has discovered in the past that this type of an incentive will accomplish the objective—increase sales or reduce costs—or both.

However, when it becomes necessary to make the income tax reporting for these payments, there are several problems that may arise for your paper business.

Here are several points to consider to be sure your bonus payments to your employees will be allowed as a regular and necessary business expense—a tax deduction.

Don't make it a gift

As you know, if the money received is a gift, the person receiving it does not need to report it as income. Some employers are inclined to call the bonus payments a gift and thus save their employees the necessity of paying income tax on the amount received.

Don't call it a gift!

A payment to an employee cannot be both a "gift" and "additional compensation." It is one or the other. If it is a "gift," your employee does not have to pay income tax on the amount, but you cannot deduct it from your income. If it is "additional compensation," you can deduct it as a regular and necessary expense of doing business, but your employee must report it as taxable income.

Generally speaking, it is better to call it "additional compensation" and to take the deduction from the business. For instance, $10,000 in bonus payments to employees would result in an income tax saving of $5,200 for a corporation in this tax bracket. If the $10,000 is distributed to ten of your employees in the amount of $1,000 each as a gift, it will probably amount to an income tax saving of only $2,500 if your employees are in the 25 per cent income tax bracket.

There is, however, one exception to this general rule on gifts, Revenue Ruling 55-555 indicates that the value of a gift such as a ham or a turkey distributed to employees at Christmas is a non-taxable gift to the person receiving it. And, it can be considered a regular business expense and be deducted by the employer.

Make sure your bonus is additional compensation

If you are under legal obligation to make the payment to your employees, it is not a gift—it is considered additional compensation. For instance, if you announce to your employees that you will pay a year-end bonus of 10 per cent of your net profits, this is a legal obligation to make the payment.

On the other hand, even if you are not under legal obligation to make the payment, you may still consider it "additional compensation" and take the deduction from your income as an expense of doing business. Call it "additional compensation" and take the regular deduction as a business expense.

Be sure your bonus is reasonable

The Internal Revenue Service may investigate your income tax return when the amount distributed in bonus payments is not considered reasonable. This rule in the Internal Revenue Code brings up the question of what is reasonable compensation?

In the Internal Revenue Code (Section 1.162-7), reasonable compensation is the amount that would ordinarily be paid for like services by like enterprises under like circumstances. Obviously, this does not boil down to any mathematical formula and each case must be considered on the facts that relate to it.

Generally, it has been held that these factors should be considered in determining whether or not the compensation is reasonable:

(1) Profitableness to the employer for the services.
(2) Number of people capable of performing the services.
(3) Living conditions where the services are performed.
(4) Technical training required to perform the services.
(5) Degree of difficulty of handling the work.
(6) Working conditions where the services are rendered.
(7) Amount of responsibility involved in the performance of the services.

Don't base bonus on stockholdings

One area often investigated by the Internal Revenue Service is the relationship between the bonus payments and the stockholdings of the person receiving this additional compensation. Compensation (regular and extra) is paid for services rendered. It must not be based on investment and in reality be a disguised dividend.

Be sure there is little or no relationship between the investment of executives and their compensation —salary plus bonus payments.

Check bonus payments to minor children

Here again the Internal Revenue Service will investigate bonus payments you make to your employees. Even though the dollar amount is not large, it must carefully evaluated to be in line with other bonus payments you make.

For instance, if your minor child works during a vacation period and earns $300 at regular hourly wage rates, this would be considered fair compensation. But, if at the end of the year you decide to give all of

your employees a bonus of $100 and include your minor child in this bonus payment, it may not be allowed. Compare the ratio between salary and bonus for your minor children carefully to avoid income tax problems.

Handle bonus payments on an accrual basis

Bonus payments of your employees this year can be paid next year and deducted from your income this year under certain conditions. When you cannot determine exactly what the amount of the bonus will be until the end of the year, and when it cannot be paid until next year, there are certain rules you must follow to be able to deduct it from your gross income this year.

1. You must be on an accrual accounting basis. If you are on a cash accounting basis, the amount of the bonus paid to your employees must be deducted from your gross income in the year paid.

2. Your total bonus payment must be determined by some type of formula in effect before the end of the year. For instance, if you intend to pay out 10 per cent of your net profits in bonus payments when the year-end profit is determined, this would serve as a formula in effect before the end of the year.

3. You should notify each employee orally or in writing of the percentage of the total bonus payment to be awarded to each employee. This notification should be a firm obligation on your part and only the exact amount will be left open depending on the final profit figure for the year. This is based on the Internal Revenue Ruling 55-446.

However, in a recent ruling (Revenue Ruling 61-127), you can notify employees as a group about how much the bonus will be. For instance, you could say that the bonus payment will be between 4 and 5 per cent of profits. You can deduct an amount equal to 4 per cent this year (you are legally bound to pay this amount) even though you do not make the actual payment until next year. If you pay 5 per cent next year, the coverage will be deducted next year.

4. You should make the bonus payments as soon after the close of the year as is possible. Generally two and one-half months is considered the maximum for this delay. However, you might get special consideration from the Director of Internal Revenue if your case is presented with reasons why it is not possible to make the distribution sooner.

A bonus program for your business can increase sales or reduce costs—or both. However, to be sure that it does not have any profit pitfalls, you should check or have your accountant check your bonus program against these income tax regulations.

MODERN TRIMMER

Continued from page 511

it can be installed on any width or length guillotine-type trimmers having a screw-operated back gauge. The addition of a "Spacemastre" automatic spacer on such machines increases trimming production up to 50 per cent. Other features of "Trimmastre" trimmers offer a precision undercut knife for fast knife action with no draw, adjustable shear for proper angle of cut, electro-magnetic clutches for safety of knife operation, a central lubrication system and an automatic loading and unloading feature (optional).

COLD SODA PULP

Continued from page 518

quality of cold soda pulp. Furthermore, pressing to low moisture content will reduce the sodium hydroxide content at the paper machine headbox, and a proper level of the chemical is vital to satisfactory flat crush values. The residual digestion chemical in the cold soda process for corrugating medium is its own built-in strength additive.

Sodium hydroxide increases flat crush values in nearly a direct proportion to its content in the headbox stock, but above proper levels it creates difficulty in handling the sheet in its wet stage.

Sodium hydroxide affects stock freeness inversely to the chemical content. So it is, that a level insuring a good flat crush test as well as adequate freeness must be established. Furthermore, this standard must be modified by the type of secondary refining employed — whether the clipping action of non-pressurized jordans or the brushing action of pressurized refiners. Bacterial slime is no problem at a pH of 12.0 or higher. And with proper deaeration incorporated into the cleaning system, foam is no difficulty.

Problems encountered

Failure to mention the possibility of any inherent problems in the cold caustic process would be unfair. There are one or two, depending upon the type of water supply. In hard water usage, the sodium hydroxide precipitates out the carbonates, and these, along with adhering white water fibers, tend to collect in stock and white water lines. And obviously, the high caustic content will reduce drying felt life. However, it is possible to install neutralizing equipment that will greatly minimize this problem.

Machine speed, economy and quality

With cold soda pulp and reclaimed kraft or corrugated box pulp blended to approximate semi-chemical proportions, and with proper refining and optimum sodium hydroxide content at the paper machine headbox, it is possible to run considerably in excess of 600 fpm. and produce a corrugating medium with flat crush values in excess of 38 psi. and with excellent runability. It has been done at the Coshocton mill and without the use of any strength additives in the production of 26-lb., 9-point corrugating medium.

The success of the present operation does not suggest that much more could not be accomplished in both economy and quality. It is quite possible that instead of using wastepaper for tear strength, an even superior blend product for that purpose could be produced by an adaptation of the Correns-Jacopian kraft process to further utilize the locally available hardwoods. This would be a simple matter to determine in a laboratory equipped with a refiner.

How well the various continuous digestion systems will perform with this application of the cold soda process for corrugating medium remains to be seen. Limited laboratory observation, however, indicates that a process in which chips are pressed prior to any contact with the digesting liquor may be the most effective.

Besides the advantages already mentioned — economy, quality of product and simplicity of operation — the cold soda process produces only a low level of objectionable odors — hence no problems in the field of public relations. These advantages commend the cold soda process in the corrugating medium field of the paper industry.

HIGHLIGHTS OF 1961 NATIONAL SAFETY CONGRESS

VINCENT P. COULON

ROBERT J. GELL

ROBERT M. GILMORE

MERLIN C. RACE

PULP AND PAPER members of the National Safety Council held their 49th annual meeting this year at the Conrad Hilton Hotel in Chicago from October 16 to 20, 1961. On-the-job and off-the-job safety was stressed throughout the entire Safety Congress. The theme selected to emphasize this was: "Safety Everywhere . . . . all the time". The following report highlights this year's meeting.

General sessions

A progress report and other opening remarks were given by D. V. Hill, general chairman of the pulp and paper section, at the first session.

"A New Challenge for Safety" was then directed to the audience by Harry M. Gray of Sealright-Oswego Falls Corp. "The demands for safer working conditions", stated Gray, "have increased through the years; and employees today will not sell their services to a company with unsafe working conditions. The safety manager today must dedicate himself to his job and to the cause of safety. He must educate both management and employee on the importance of keeping a sound program. Safety is everybody's business. Safety managers are capable of doing all this if they truly dedicate themselves".

One way to educate management was explained by V. K. Anderson of Kroehler Mfg. Co. in his talk—"A Report to Management". Keeping management posted on the activities and progress of the safety program through periodical reports give management a better understanding of their obligation toward the program. Many times, these reports are used in decision making — budgets, etc.

The second day's program opened with a session on fire prevention. M. M. "Smokey" Batzer, a fire prevention trainer from Philadelphia, spoke to the group on the importance of fire prevention classes which he felt was a must in every company safety program. The following main points were brought out in his talk: (1) Recognition of fire hazards, in-plant fire prevention and fire fighting training are the keys to lower industrial fire losses; (2) Make a careful, thorough inspection to see if you can spot any fire hazards and to eliminate any that can be found; (3) Find out whether you have sufficient fire-fighting equipment and, above all, whether what you have actually works; (4) Find out whether employees, on all levels, have sufficient training and know-how to deal effectively and immediately with any fires that may occur; and (5) Satisfy yourself that both employees and management are fire-prevention oriented.

Fire starts because of carelessness of employees or because of faulty maintenance, and when it comes there is no plant organization trained and ready to extinguish it promptly and with a minimum loss.

"Aids in Influencing Human Behavior" was a talk by Glenn F. Griffin, an industrial training consultant from Park Ridge, Ill., "Harmful or

M. M. "Smokey" Batzer spoke on the importance of fire prevention training.

D. V. Hill

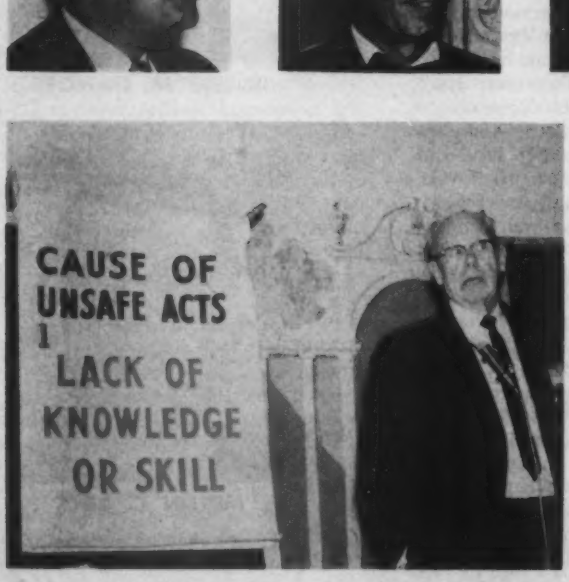
E. J. Amberg

H. M. Gray

O. A. Laakso

V. K. Anderson

C. Lauck



G. F. Griffin spoke on aids in influencing human behavior.

safe attitudes make or break a good safety program", Griffin told the group. "The first step toward influencing a safe attitude is to decide what attitudes you want your employees to have toward making safe-working conditions. The following aids can then be used to achieve this behavior: (1) Planning the program; (2) Training supervisors; (3) Promotion (constant low-pressure promotion of program); and (4) Sharing responsibility.

Group meetings

The following is a list of group meetings held during the week giving the subjects covered and participating speakers.

Pulp and Paper Manufacturing — "Radioactive Isotope Systems in the Paper Industry" by E. J. Amberg of Industrial Nucleonics Corp., Chicago; "Safety is Built into The Kamyr Continuous Digester" by O. A. Laakso of Kamyr Inc., Hudson Falls, N. Y.; and "From These Forests", a motion picture produced by International Paper Co.

Paper Converting — "What Top Management Expects from Industrial Safety and Why" by George A. Oechsle of Continental Can Co., Elkhart, Inc.; and "How Can Line Supervision Satisfy Top Management" by Russell de Reamer of International Business Machines Corp., New York City.

Joint Session with Wood Products Section — "Pulpwood Logging — Existing Conditions — Safety Needs" by Charles T. Wright of American Mutual Liability Insurance Co., Raleigh, N. C.; "The Future of Two-way Radio in Logging Safety" by Donald R. Jones of Motorola Corp., Chicago; and "Mechanization Can Reduce Accidents in Logging" by E. C. Cordon of Louisiana Forestry Commission, Woodworth, La.

Presentation of awards

During the week, the annual joint luncheon with the Wood Products section and the Pulp and Paper section was held.

Chester Lauck, executive assistant for Continental Oil Co., presented the keynote address during this luncheon. The subject of this address was "The Human Side of Accident Prevention".

This luncheon is highlighted each year by the presentation of the top annual safety awards.

The Edward Benton Fritz Memorial Trophy was presented this year by A. Scott Dowd (president and publisher of The PAPER INDUSTRY, Fritz Publications Inc., Chi-

cago) to United States Gypsum Co. of South Gate, Calif.

This award is presented each year to give national recognition to the mill that achieves the most outstanding safety record during the contest year.

The Arthur Hoyt Scott Award was presented by J. S. Baker Middleton (personnel & safety director of Scott Paper Co.) to the Consolidated Paper Corp. Ltd. of Grand'Mere, Quebec. This is the third consecutive year that Consolidated has received this award. The company now has full possession of the trophy. The rule of this award is: Any company winning the trophy for three consecutive years, has full possession of the trophy.

This award is presented each year to the company (multi-plant) making the best safety achievement for the contest year.

The Distinguished-Service-to-Safety Award was presented by Walter Montgomery (vice president for industry, National Safety Council) to Fred Brown (vice president for engineering, Employees Mutual of Wausaw, Wausaw, Wis.).

This award is presented each year to a chosen individual whose efforts (in the opinion of the judges) have been outstanding in safety work.

1960 safety contest

There were 708 participants who finished in the 1960 competition. This consisted of 323 pulp and paper mills, 370 converting plants and 15 pulpwood logging units. The total exposure reported by all contestants was 592,706,000 manhours. There were 4,418 reported injuries, a decrease of 5.8 per cent.

The cumulative frequency rate of all divisions except Pulpwood Logging was 6.91, a decrease of 5 per cent. The cumulative rate of Pulpwood Logging (Division 3) was 30.45, a decrease of 9 per cent. Pulp and Paper Mills (Division 1) decreased its frequency 5 per cent to 6.31. Converting Plants (Division 2) decreased its frequency 4 per cent to 8.16.

New officers

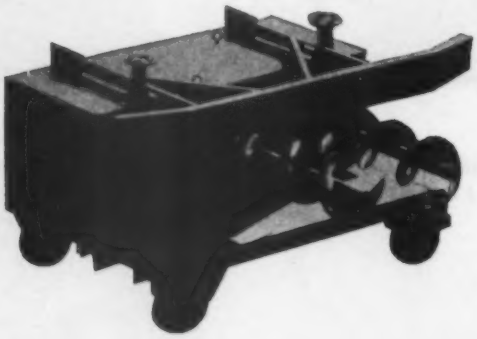
The following officers have been elected for the 1961-62 term: *General Chairman* — Vincent P. Coulon, Sealright-Oswego Falls Corp.; *Vice Chairman and Program Chairman* — Robert J. Gell, Paper Mills Div., Eastman Kodak Co.; *Vice Chairman and Newsletter Editor* — Robert M. Gilmore, Rayonier Inc.; *Secretary* — Merlin C. Race, St. Regis Paper Co.

E. M. Hazzard (left), personnel superintendent and safety director for the South Gate, Calif., plant of U.S. Gypsum Co., receives Edward Benton Fritz Memorial Trophy for his company from A. S. Dowd (right), president and publisher of Fritz Publications Inc., Chicago.

Julius A. Draper (right), director of safety for Consolidated Paper Corp. Ltd., Grand'Mere, Quebec, receives the Arthur Hoyt Scott Award for his company from J. S. Baker Middleton (left), safety director of Scott Paper Co.

Distinguished-Service-to-Safety Award was presented by Walter Montgomery (left) vice president for industry, National Safety Council, to Fred Brown (right), vice president for engineering, Employees Mutual of Wausaw, Wausaw, Wis.

SLAB CHIP STORAGE BECOMES POPULAR WITH IMPCO CHIP DISCHARGER



This discharger travels back and forth on rails in a tunnel under your chip pile. The action of its two counter-rotating screws withdraws the chips through a continuous opening in the side of the tunnel onto a traveling belt conveyor. A rapid and regulated flow of chips is fed directly to your digesters. No operator is required since the discharger is remote controlled from the digester floor. Feed capacities up to 100 cords per hour with 15 connected horsepower.

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FASTUSOL YELLOW RP and RG are readily bleached with chlorine for simplified re-use of broke. They can be added dry to the beater without danger of showing color specks. They show no indication of burning-out or migration, hence being eminently suitable for coloring board dried at high temperature.

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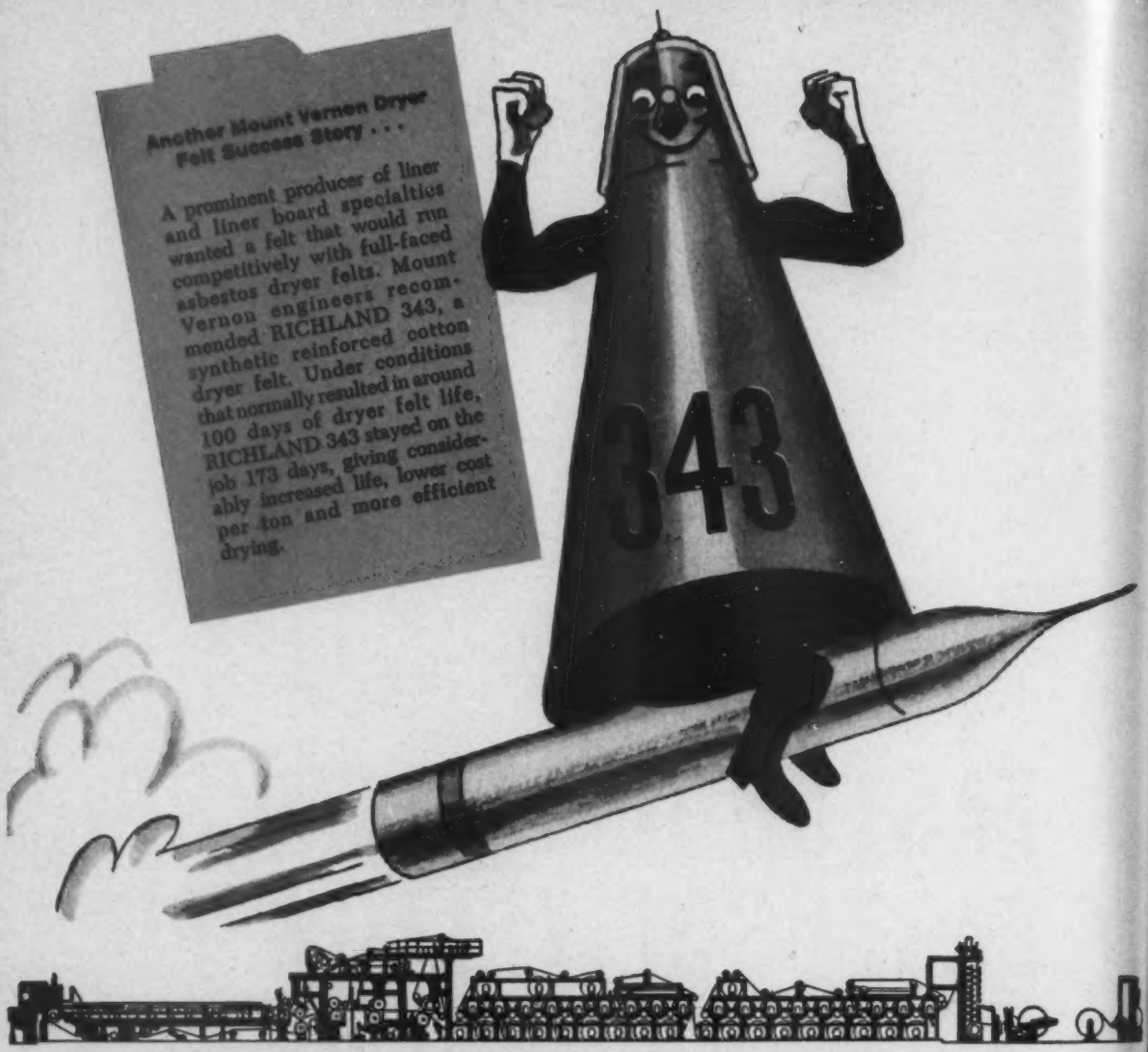
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Warren B. Bullock

Hydrotropic process — Forums for salesmen — Tariff conference to end

Columbia University has announced the discovery of a new method — the hydrotropic process — for reducing wood chips to pulp, but in other quarters the question is raised as to whether the new process developed in a laboratory is commercially practicable. *The July 1960, issue of* THE PAPER INDUSTRY *describes this process on pages 255 to 257.*

Back of this announcement is the story of a Columbia professor's lifelong search for better methods of utilizing the forests of the United States for the production of pulp.

In the 1920's, when the inroads of newsprint from Canada's supposedly inexaustible stands of spruce threatened the future of the United States industry, Dr. Ralph H. McKee of the Columbia faculty announced success in the production of sulfite pulp from southern pine. What was possible in the test tube, however, proved commercially impractical, and it was decades before new processes made it possible for southern pine to be used for chemical and groundwood pulp of newsprint quality.

In the hydrotropic process, the following claims are made: (1) Production of more pulp per cord at lower cost; (2) Elimination of river and air pollution; (3) Use of lesser quantities of water and chemicals at a cost of 50 cents per cord for semi-hydrotropic pulping as against from $5 to $50 per ton by older methods; and (4) Pulp production eight times faster than in other processes.

According to Dr. McKee, the Brown Co. of New England is testing the new process with a ton of chips at a time.

On the other side of the picture, however, there is doubt expressed in some quarters as to the commercial practicability of the new process. Dr. Kenneth A. Arnold, director of research for St. Regis Paper Co., looks on the new process as a laboratory test not fully developed and says his company had considered the process but decided against it. In other quarters, the question is raised whether the resultant pulp has the strength and bleaching quailties needed for some grades of paper.

Canada — seven-day operation

The improving outlook in the paper industry has been featured by an agreement in principle between five Canadian newsprint mills, representing about one third of Canada's production of this grade, and the paper mill unions for seven-day operation of the mills. Some phases of negotiation with the unions remain under discussion, but it is possible that the new schedule will become effective next May.

Training forums for paper salesmen

The growing tendency to give the public a better understanding of the importance of the paper industry is not only reflected in extending paper-making courses in colleges and universities, but also into the distributing field with better training for paper salesmen. As an example of the trend toward training forums, a Philadelphia jobber has secured the establishment of a course in paper at St. Joseph's College in that city. The new course was due to Mervyn M. Golder, treasurer of the G. B. Goldman Paper Co., and was initiated in September with representatives of paper manufacturing companies participating in the program. Barnie Kelcher of Hammermill Paper Co. is serving as coordinator of the course.

Tariff conference

The year-long tariff conference, in which the U.S. and other GATT countries have been discussing mutual reduction of tariffs, will end about the last week in November — according to present outlook. Meanwhile the free trade and protectionist blocks are girding their loins for the expected open hearings on projected United States duty reductions. Three well-organized groups are expected to be vocal in advocacy of lower rates, while individual industries, and even powerful labor organizations, are expected to point out possible losses of income by an expansion of lower-priced imports from abroad.

Certain-Teed's stock activities

Certain-Teed Products Corp., the current glamour stock of Wall Street, is considering a 25 per cent stock dividend, with plans to continue the current 15-cent dividend on the new total stock issue. In the fourth quarter, the dividend may even be increased.

The much-talked-about shell house construction which has featured Certain-Teed's recent activities has lifted the price of the stock from a little over $20 per share to well over $60 in comparatively a few months.

Paperboard increase

While current production of paper and paperboard in the U.S. is running at over 90 per cent of rated capacity, thereby giving enough surplus to barely assure adequate service to customers, output for the year is heavier than a year ago. The quarterly review of the Business and Defense Services of the Department of Commerce foresees continuing strengthening of the market in the remaining months of the year. The Bureau expects a total output of 35,500,000 tons for the year, an increase of nearly a million tons over 1960.

Financial note

Securities of paper companies which have seen future profits in

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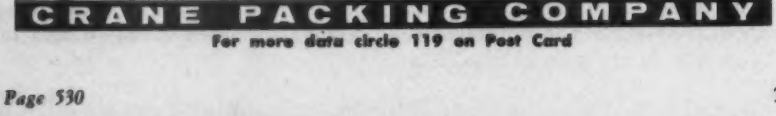

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higher prices for coarse papers and paperboards showed some improvement in early October over the prices for the same securities a month earlier. Other paper mill securities were spottily up or down fractions from early September quotations.

Net Incomes

Whippany Paper Board Co. — Profits for the year ended June 30, $1,967,773; a year ago, $1,783,768. Sales decreased nearly 10 per cent while net income increased.

S. D. Warren Co. — Income for six months ended June 30, $3,007,000; a year ago, $2,858,000.

United Board & Carton Corp. — Income for the year ended May 31, $119,447; a year ago, $196,665.

Packaging Corp. of America — Net income for the fiscal year ended June 20, $4,005,736; a year ago, $6,510,715.

Stock and Bond Quotations

New York Stock Exchange

Closing Prices October 10, 1961		September 11, 1961
American Can	44¾	44
Same Pref	38⅞	36½
Celotex	25⅞	27
Same Pref	*18-19⅜	*18¾-20
Certain-Teed	69⅜	61⅜
Champion Papers	37½	37
Same Pref	92	*92-93¾
Chesapeake of Va.	40¼	38⅛
Container	25½	26½
Same Pref	*88½-91¼	91¾
Continental Can	43	42⅝
Same Pref	*82-82½	82½
Crown Zellerbach	61½	59½
Same Pref	92	*91½-92
Diamond National	47½	44½
Same Pref	31⅞	32⅛
Federal Paperboard	41½	40¾
Same Pref	*22¼-22¾	*21½-22
Fibre Paper Board	29⅜	31
Georgia Pacific	59⅞	62⅛
Great Northern	60¼	*58¼-59¼
Hammermill	33¾	34
International	37⅞	35⅝
Same Pref	*94½-95½	95
Kimberly-Clark	80⅞	80
KVP Sutherland	36½	36⅜
McAndrews & Forbes	32¼	34⅛
Masonite	28	29¾
Mead Corp.	48¼	45¾
Same Pref	91½	*91½-93
Minn & Ont	28¾	32¼
Nat. Vulc. Fibre	20¼	21¼
Oxford Paper	30¼	28-29¼
Same Pref	93¼	94
Rayonier	22⅛	22¼
Riegel Paper	30⅛	31
St. Regis	39½	37¾
Same Pref	*97-99½	*98½-99½
Scott Paper	126½	115¾
Same $4 Pref	91½	*90½-92⅛
Same $3.4 Pref	*75-76½	*75-75½
Sealright	46⅛	42¾
Standard Packaging	20	23
Same $1.60 Pref	*55-65	*65-75
Same $1.20 Pref	26¼	27
Same 6% Pref	27¼	28¼
Union Bag-Camp	40⅛	39
United Bd. & Cart.	22	23½
U. S. Gypsum	89½	98
Same Pref	157½	156¼
West Va. P&P	36¼	38¼
Same Pref	*96-97	*95½-97

New York Stock Exchange — Bonds

Champion Paper 4¾%	108	114
Champion Paper 3¼%	95½	94½
Champion Paper 3¾%	82½	84
Diamond Gardner 4%	—	92
Kimberly-Clark 4⅝%	102¼	102⅜
Kimberly-Clark 3¾%	92⅝	91¾
Oxford Paper 4¾%	107	113½
Scott Paper 3%	163	150

American Stock — Exchange — Stocks

Allied Paper	15⅞	15⅝
American Writing	33½	34
Brown Co.	13⅜	14⅞
Puget Sound	22	22

*Closing Bid and Asked Prices

India's Paper Industry In Growing Economy

India's progress in the pulp and paper industry is reported here by Surrendra Kumar Sikka. Sikka obtained his M.A. degree in Economic and Public Administration from the University of Rajasthan, Jaipur, India, and obtained his M.B.A. degree in marketing from the University of Georgia. He is presently workng as a trainee at Weyerhaeuser Co., Longview, Wash.

India is expecting much progress in its pulp and paper industry. In the next five years, an additional 64 million children will receive free and compulsory education. This, alone, will cause a great demand for paper. Since 1948, literacy has gone up from 8 per cent to about 40 per cent of the population. The per capita consumption of paper is only 2 lbs at present, but will go up as the country makes economic progress. As educational and living standards are increasing, the "effective demand for paper and board products may increase by 22 per cent annually". India's paper production has gone up by four times during the last five years. The present capacity of 410,000 tons a year will be boosted to 910,000 tons a year by 1965. The newsprint expansion from 30,000 tons to 150,000 tons a year has been planned. Bagasse, bamboo, grass and wood are principal raw materials from which pulp and paper is made.

Research has been done to make paper out of bagasse at a commercial scale. Rohtas Industries of Dalmianagar have already entered an agreement with Crown Zellerbach and Hawaiian Development Co. for the production of newsprint from bagassee. Bagassee is available in such great quantities in India that Dr. J. C. Agarwal of Bengal Paper Mill Co. feels that this source alone could support a 2,000,000 ton/year paper production. Rohtas Industries of Dalmianagar, Orient Paper Mills of Calcutta, West Coast Paper mills of Bombay are leading and progressive paper mills of India. production of pulp and paper. In the earlier stages, the production of these newly started mills will be

The existing mills are expanding their capacities. The government of India has, this year, issued license to about 70 new firms to start the from 10 to 50 ton/day. New plants to manufacture small and medium sized pulp and paper machinery are being started. There is a great scope for foreign collaboration for the manufacture of pulp and paper machinery. A. B. Karlstads Mekaniska Werkstad of Sweden, Black Clawson of U.S.A. and a number of other European and American firms have already entered in such a venture. A large number of Indian firms are looking for further technical and financial collaboration. Financial collaboration is generally in terms providing tool-making machines. While great progress is being made in the manufacture of pulp and paper, great quantities of pulp will still be imported in the future. At present, India is importing about 150,000 long tons of pulp annually — mostly from European and Scandinavian countries. American share of export to India is negligible. This is not due to any significant difference in the prices of American and European pulp, but due to ignorance about the marketing condition in India. India is marching ahead economically and is an expanding market for Americans.

Electronic Computer Installed At Institute

The Institute of Paper Chemistry has installed a new IBM electronic computer system. It consists of the IBM 1620 data processing system with the 1622 buffered card reader-punch.

The new system will be used for scientific research and also for machine computation courses which the Institute has offered for several years. The system is being placed at the Institute of Paper Chemistry under the nation-wide "University Program" of the International Business Machine Corp. Part of the rental charge is contributed by IBM.

Pictured in the photo are: James C. Feese, IBM representative, pointing to lights on the machine's console; Dr. Edward F. Thode (standing), chairman of the Institute's computer committee; and John Bachhuber (seated), supervisor of machine computation at the Institute. This new computer unit replaces a smaller unit which has been used since 1959.

J. O. Ross Celebrates

J. O. Ross Engineering Division of Midland-Ross Corp., New York, N.Y., is now entering its 40th year of operation.

Continued acceptance of its service to the industry since 1921, has brought the company to rank as one of the leading suppliers of ventilating and drying systems to the paper industry. It provides millions of dollars worth of equipment annually to this field alone for such purposes as: air make-up; machine room ventilation; paper machine hoods; felt drying; wet- and dry-end exhaust; calendar cooling; motor cooling; trim conveying; comfort cooling; laboratory temperature and humidity control; finishing room conditioning; stock preparation ventilation; high-velocity drying; and other paper, pulp and converting mill air system.

To supplement its engineering services, Ross Engineering maintains laboratory facilities at one of its New Brunswick plants. Here, customer drying problems can be studied and the effects of cross, downward, upward and parallel air flow, and air impingement, can be visually observed and the effects of various air flow conditions at various temperatures can be measured and scientifically evaluated.

One recent development to come out of this laboratory is high-velocity drying. High-velocity drying directs heated air at high velocities against traveling webs, speeds drying time, increases production and lowers costs. This development is not only applied to paper processing but is also used in the new Ross-Waldron metal strip coating process and in such applications as drying printed grains and lacquer finishes applied to plywood. The photo shown here is a coating and drying line in operation at the Ross laboratory.

J. O. Ross Engineering merged with the Midland Steel Products Co. in 1957 and has operated as a division of the Midland-Ross Corp.

Today, the company has two plants in New Brunswick, N.J., and one in Los Angeles. Its sales offices are in New York, Chicago, Boston, Atlanta, Detroit, Seattle, Los Angeles and Mobile.

Symposium Report Published by TAPPI

The proceedings of the 1960 symposium on "Relative Humidity and Paper Test Methods" are now available as a separate report published by TAPPI. The 56-page report includes nine symposium papers and discussion on the effect of relative humidity and temperature on the physical properties of paper, the measurement of relative humidity in a test room, and the design and control of test rooms.

Copies of the report may be obtained from TAPPI, 360 Lexington Ave., New York 17, N.Y., at a cost of $1.00 per copy.

A Report Pinpoints U.S. Opportunities in Canada

Specific profit opportunities in Canada's wood and paper industry are pinpointed in a special three-part industrial survey now being issued by the Ontario Department of Commerce & Development of Canada.

Report 1 — Analysis of how U.S. companies can establish manufacturing agreements with the more than 750 Canadian firms now seeking such arrangements on a royalty or joint venture basis. Advantages include, savings on customs duties, in many cases a ready-made Canadian distribution set-up entree into British and Commonwealth markets.

Report 2 — A 24-page study of Canadian export opportunities in the U.S. market, points out that while Canada now fills nearly all U.S. newsprint requirements, other items in the wood and paper field offer excellent opportunities.

Report 3 — A breakdown of major "fabrication gaps" in Canadian industry, where home manufacture might substitute for imports. Some 71 per cent of Canada's current imports of wood, wood products and paper are wholly manufactured.

For copies of this profit-guide report, write to: Ontario Department of Commerce & Development, Box WP, Suite 1307, 630 Fifth Ave., New York 19, N.Y.

South African Newsprint Production

Newsprint is now being manufactured for the first time in South Africa by the South African Pulp & Paper Industries' $8.4-million newsprint plant at Enstra. The plant, which uses pulp made entirely from South African-grown timber, is now producing newsprint at the rate of 40,000 tons a year.

Also in South Africa, construction of a $2.8-million paper mill in Piet Retief, has begun. The company behind the new mill, Ngoye Paper Mills, expects to start production in July 1962, with an initial annual output of 12,000 tons of fluting paper.

Midland-Ross Makes Agreement With French Firm

Midland-Ross Corp. has negotiated an agreement with Ameliorair, Societe Annoyme in Paris France, for the manufacture and

Continued on page 534

*Idea submitted by B. M. Reaves, Sonoco Products Co., Hartsville, South Carolina

Petrified Forest, Arizona Photo by: Ewing Galloway, N. Y.

HAM FELTZ says:

"Reminds me of the long-lasting quality of HAMILTON Felts"

"Arizona's famous Petrified Forest is estimated to be more than 100,000 years old. Hamilton Felts can't quite match that record, but since 1858 papermakers *have* found that Hamilton Felts deliver the longest, high-quality performance between changeovers.

"They help you beat the high cost of downtime by keeping your machines running at top speed . . . longer . . . turning out more tonnage with less broke or imperfections."

If that is the performance you wish from your felts why not start using us as one source of your felt supply?

YOU CAN'T BEAT

Hamilton FELTS

*WIN . . . *A NEW Shakespeare Spincast Fishing Outfit!*

"What famous place reminds you of Hamilton Felts? Tell us why in a few words; sign your name and address and name of company. Each idea from a U.S. papermaker that we use wins a new 1962 model Shakespeare Spincast Rod and Reel—FREE! When identical winning ideas are submitted by 2 or more papermakers, the one with the earliest postmark will be considered the winner. Every U.S. papermaker *entrant* receives a famous Rex Spoon fishing lure — FREE. Send me your suggestion — today.

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Cincinnati 2, Ohio."

SHULER & BENNINGHOFEN, HAMILTON, OHIO

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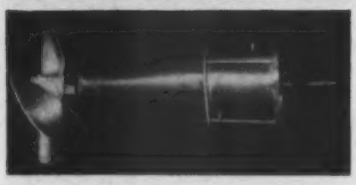
We made the **FIRST**
and we make the
FINEST



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AGITATORS

Nearly 2000 Noble & Wood propeller agitators are in use throughout the industry, providing

- **better agitation**
- **better color mixing**
- **complete blending**

Bring your stock agitation problems to the home of advanced propeller knowledge for quick, practical solution.

For over half a century, Noble & Wood machinery has helped produce better pulp, paper and paperboard — more profitably.

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NOBLE & WOOD ACCEPTS A NEW CHALLENGE ENTHUSIASTICALLY, LED BY A VIGOROUS NEW MANAGEMENT TEAM AND BACKED BY 67 YEARS OF SUCCESSFUL EXPERIENCE

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NEWS OF THE INDUSTRY

Continued from page 532

sale of a broad range of products of the J. O. Ross Engineering Division of Midland-Ross.

Under the agreement, Midland-Ross will also acquire an equity interest in the French company whose present major product lines include textile machinery, industrial ovens and air-conditioning equipment for industry.

Company Changes

Consolidated Paper Co. of Monroe, Mich., has announced the acquisition of **Meyers Corrugated Box Co.** of Cleveland, Ohio. Meyers will be operated as a Division of Consolidated and will continue to manufacture corrugated shipping containers.

Mead Papers Inc. of Dayton, Ohio, has been named exclusive sales agent by the **St. Croix Paper Co.** for a new line of groundwood printing paper grades. Mead will distribute the new line through its established sales offices.

Inlander-Steindler Paper Co. of Chicago, Ill., has acquired the **Blackhawk Paper Co.** of Rockford, Ill., and the **Arrow Paper Co.** of Freeport, Ill., Both companies will continue to maintain separate distribution warehouses and sales offices and will operate as divisions.

Scott Paper Co. of Philadelphia, Pa. has announced the incorporation of a Philippine affiliate, **Eastern-Scott Co. Inc.** Eastern-Scott is owned 50 per cent by Scott's wholly owned subsidiary, **Scott Overseas Corp.** The remainder of the equity is held by **Eastern Paper Mill Co. Ltd.**, a Philippine Partnership.

Rap-In-Wax Co. has officially changed its name by action of its stockholders to the new name of **Rap Industries Inc.** The diversification which heralded the name change sprung from the acquisition of several companies. The Home Products Division will maintain the name of Rap-In-Wax for its consumer roll of waxed paper sold through supermarkets.

Georgia-Pacific Paper Co. of Portland, Ore., has agreed to purchase **Imperial Bag & Paper Co.**, its subsidiary, **Imperial Bag & Paper Sales Co.**, and **Fleetwood Paper Co.**, Chicago, Ill. The purchase price was not disclosed. Imperial manufactures a full line of standard grocers bags and sacks with sales primarily to midwestern and eastern markets.

The acquisition of controlling interest in the **Philadelphia Card & Paper Co.** has been made by **Rhodes Paper Co.** of Philadelphia. Both companies are Fine Paper Merchants, distributors of fine printing and specialty papers in the Delaware Valley area. Both Rhodes and Philadelphia Card & Paper will continue to operate as in the past, as separate corporations.

Sorg Products Co. of Middletown, Ohio, a wholly owned subsidiary of **Sorg Paper Co.**, has acquired all of the assets of **Aatell & Jones Inc.** of Philadelphia, Pa. Aatell & Jones will become the Aatell & Jones Division of Sorg Products Co. Aatell & Jones manufactures high quality custom and stock designed tray covers, place mats, doilies, coasters, credit cards, drink lists, diet cards and other related products for hospitals, hotels, etc.

Allied Paper Corp. has added its seventh business forms company since April 1960, by the acquisition of **Arthur J. Gavrin Press Inc.** of New Rochelle, N.Y., and its branch plants at Denison, Texas, and Danville, Ky.

Kennebec Pulp & Paper Mill Co. Inc., has exercised its option to buy **Scott Paper Co.'s** groundwood pulp mill in Madison, Me. The transaction deals exclusively with Scott's Madison Mill and the water rights connected with it. Scott's pulp and paper mill in Winslow, Me., is not involved. Kennebec will integrate the groundwood facility into its existing pulp and paper mill which is also located in Madison.

Mead Corp. of Dayton, Ohio, has agreed to acquire **Waterloo Container Corp.** and **Waterloo Corrugated Box Co.** of Waterloo, Iowa, and **Fort Dodge Container Corp.**, Fort Dodge, Iowa. The three companies are engaged in the production and sale of corrugated shipping containers. They will operate as a Mead wholly-owned subsidiary under the names of Waterloo Corrugated Box Co. and Fort Dodge Container Corp.

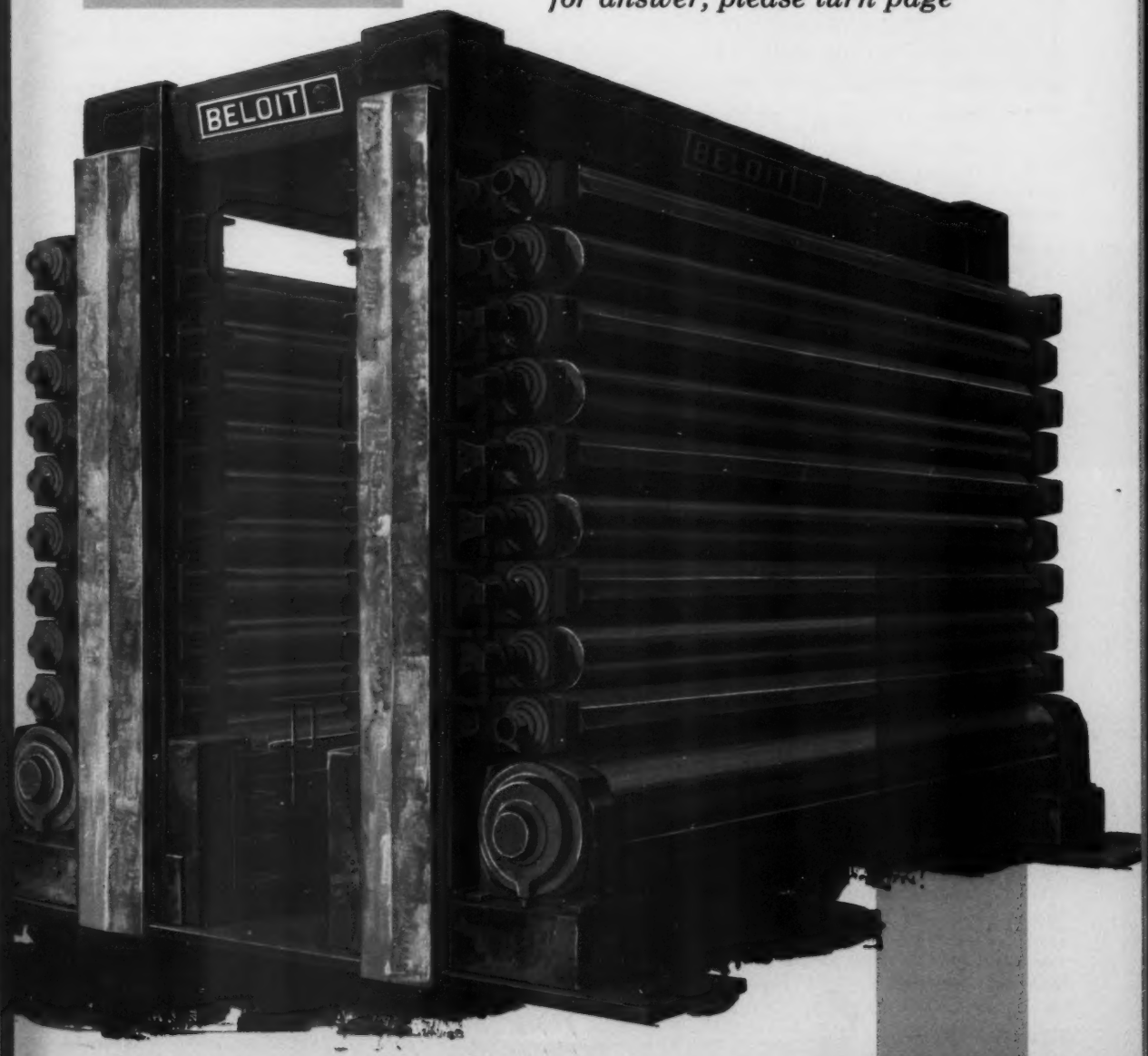
Continued on page 537

what features
and advantages
does the new

BELOIT CALENDER

design bring
to papermaking?

for answer, please turn page



BELOIT CALENDERS

...new concept provides more efficient and economical operation

The new Beloit Calender shown here represents a major breakthrough in calender design and gives promise of greatly increased operating efficiency. Every feature of this new-type machine calender reflects rugged dependability, operator convenience, and ease of operation. Location of roll-lift mechanism in the base eliminates the necessity for service ladders and footwalks, and substantially lowers the over-all calender height. Other important features:

- rapid, positive roll removal
- direct air-cushioned loading and nip relieving
- rolls individually supported in raised position
- operating ease and accessibility.

Descriptive literature upon request.

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recent expansions

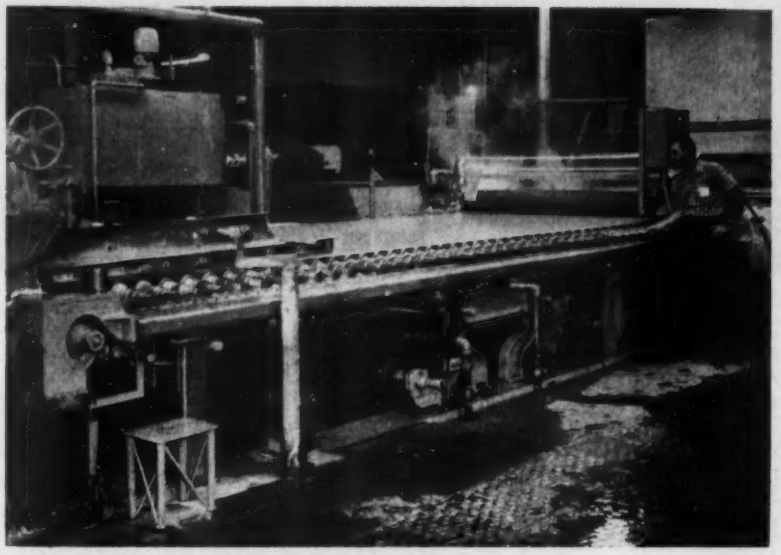
Sandy Hill Rebuilds No. 2 Machine At Rising Paper

A recent modernization program at Rising Paper Co., Housatonic, Mass., resulted in the rebuilding of the company's 94-in., No. 2 machine. The project, carried out by Sandy Hill Iron & Brass Works, resulted in lengthening the fourdrinier table 4 ft. and the addition of eight new table rolls. The shake rails, supplied by Sandy Hill, are now 19 ft. 10-5/8in. long and are of stainless steel. The table rail now supports 40, 4-in., rubber-covered table rolls instead of the previous 32. These rolls are supported on anti-friction bearings with adjusting screws for lowering or raising the rolls.

New Sandy Hill breast roll stands and anti-friction bearing mountings house the existing breast roll. The new stand arrangement permits lowering the breast rolls onto a remover board to allow for wire change without disturbing the pond plates or bearing receptacles.

Several improvements were also made in the flow system at the headbox of the machine.

Other improvements in the modernization program included installation of three E. D. Jones' Bertrams beaters in the stock preparation equipment. One beater is of 3000-lb cap. and the other two are of 2000-lb. cap. These have replaced 14 old-type beaters. Two 2000-lb. stainless steel washers have also replaced nine old washers. A new E. D. Jones' Pulpmaster was also installed.



Walter Atwood, assistant superintendent, stands at the suction box end of Rising's new Sandy Hill fourdrinier.

Ludlow Opens Research Center

Ludlow Corp., Needham Heights, Mass., has recently opened its new million-dollar research center. This facility is equipped with the latest laboratory equipment for the development of new products in the textile, papers and plastics fields. The papers and plastics section includes a complete range of laboratories for analytical, chemical, optical and physical studies as well as new pilot equipment for test-processing new products under production-simulated conditions.

Borden Chemical Dedicates 20th Laboratory

Borden Chemical Co. has formally dedicated its new research operation in Springfield, Ore. This is the company's fourth laboratory in the West and its 20th in the country.

Work at the new operation will be devoted chiefly to the development of new adhesives and synthetic resins for the plywood, particle board, hardboard, timber laminating and furniture industries, and will also include studies in the process development field.

Star Paper Moves Into New Plant

Star Paper Tube Inc. has recently moved into a new plant in Danville, Va. Harry M. Dalton, vice president of sales stated that the demands for Star's products have increased to the point where the company had to triple the size of the original Danville plant.

Products in the new plant will include: paper mill cores; carpet cores; convolute and spiral-wound cloth tubes; storage tubes; yarn tubes and cores; baling boards; and cloth boards and reels.

Other than the new Danville plant, the company is operating plants in Rock Hill, S.C., and Austell, Ga.

Longview Installs Beloit Fourdrinier

Longview Fibre Co., Longview, Wash., has recently placed in operation No. 9 paper machine which was designed and built by Beloit Iron Works. The 184-in. fourdrinier is designed for maximum production of 125 to 150 tons per day of lightweight paper or corrugating medium at speeds up to 1600 fpm.

Equipment on the machine includes a high velocity natural gas-fired hood by J. O. Ross Engineering which contains a control for moisture streak correction, an "Accuracy" basis weight measuring unit by Industrial Nucleonics Corp., a moisture detection unit utilizing temperature differentials designed and constructed by Longview Fibre, and hydraulic roll handling cables, also of Longview design.

The machine has two suction presses and 42 dryer rolls. Three non-driven paper rolls help regulate paper tension following the first

dryer section. No. 9 is also equipped with a three-roll breaker and marking press located between the two sections of dryers. The four-roll calender stack, a Beloit open frame design, is capable of holding eight rolls in the future. The reel is a 36-in.-diam. constant speed type, with a capacity for 88-in. roll dia. A Mount Hope roll is provided for mounting between the stack and reel.

No. 9 is the first at Fibre to include Beloit's Model "C" Flo-Vac system located between four suction boxes and the couch roll. Other features include: hydrapulper by Shartle Division of Black-Clawson; save-all by Improved Machinery Inc.; and stock cleaners by Nichols Engr. Stock refining is accomplished through the use of two Jones double disk refiners and one Bauer No. 440 disk refiner. With the addition of No. 9 machine, the maximum daily production capacity of Longview is increased to 1,350 tons.

Strathmore Rebuilds No. 6 Machine

The Strathmore Paper Co. has begun the rebuilding of its No. 6 paper making machine in the company's No. 2 mill at Woronoco, Mass.

Manchester Machine Co. of Middletown, Ohio, designed and built the new machinery for No. 6 machine, which produces bond, blueprint, tracing, diazo or white print, and photographic base papers. The machine is being redesigned to make paper at a top speed of 750 fpm, compared with the previous maximum rate of 500 fpm. The wire length of the fourdrinier is being increased from 50 to 75 ft. and 23 drying drums are being added. The new machine when finished, will be approximately 250 ft. long.

When the rebuilt machine is completed, the company will have spent almost $10-million since 1953 on the modernization of plant and production facilities at its four locations. Close to $2.5-million will have been spent in No. 2 mill at Woronoco for the new machine and required auxiliary equipment.

Continued on page 540

DOUBLE

the length of filter runs

Over 30 years of use in a variety of industrial and other installations have shown that Anthrafilt will give filter runs approximately twice as long as sand or quartz. Rates up to 200 mgad are obtainable with less clogging and packing than similar media.

Plus these other advantages:

Requires only half as much wash water.

Keeps filters in service longer periods.

Increases filter output.

Gives better support to synthetic resins.

Better removal of fibrous materials, micro-organic matter, etc.

Ideal for industrial acid and alkaline solutions.

Effective filtration from entire bed.

Less coating, caking or balling with mud, lime, iron or manganese.

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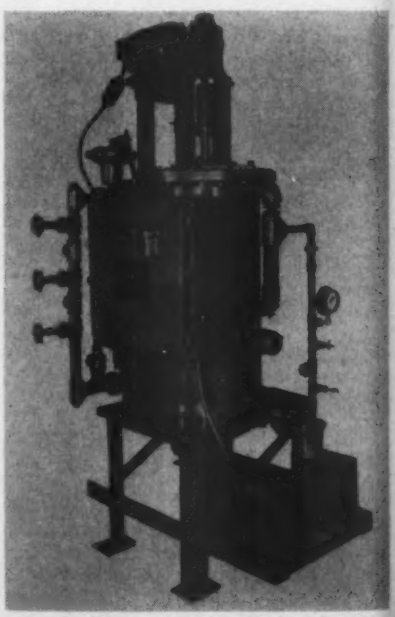
Black-Clawson To Manufacture Airevac



Black-Clawson Co. has signed a license agreement with S. D. Warren Co. for the exclusive manufacturing and sale of the patented Airevac unit.

The purpose of this unit is to remove air from coating solutions. It is anticipated that the use of the Airevac will reduce defoamer requirements, reduce apparent viscosity by removing air from the coating, and maintain a better rheological condition in the coating.

The Airevac is said to be readily adaptable to any coating installation and being portable can be moved from one machine to another with ease. Units are Available on a rental basis. Full details can be obtained from the Dilts Division of Black-Clawson Co., Fulton, N.Y.

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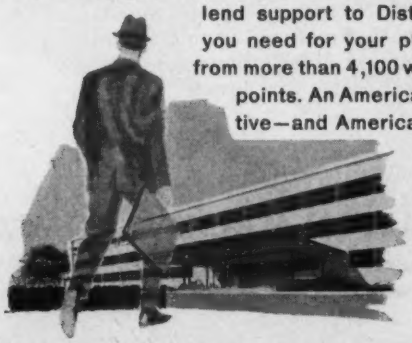
American Oil representatives operate from 74 District Offices. Thirteen Regional Offices strategically located throughout the country lend support to District Offices. The products you need for your plant or fleet are available from more than 4,100 warehouses and distribution points. An American Oil Company representative—and American Oil products—are only a telephone call from your office. We invite you to make that phone call. Or write **American Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.**



AMERICAN OIL COMPANY

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Continued from page 538

Standard Paper Installs Sandy Hill Fourdrinier

Standard Paper Mfg. Co., Richmond, Va., has recently developed "Permalife", a chemical wood pulp paper in which acidic ingredients have been eliminated to produce a printing paper of vastly greater durability, high dimensional stability and excellent printing quality. This paper has a laboratory proved longevity of more than 300 years, and was developed to fill the need of a long-lasting paper for books and documents.

For the manufacture of this paper, Standard has embarked on a $2-million expansion. The latest step in this program has been the installation of a new corrosion resistant fourdrinier on the No. 2 paper machine, built by Sandy Hill Iron & Brass Works, and two new Dilts winders. Two Noble and Wood beaters are in the process of installation.

The non-removable fourdrinier has a 102-in. by 66-ft. 3-in. wire. The first table roll section, supported on fiberglas springs, is a shaking section with the second section stationary. The breast roll arrangement provides for lowering the breast roll onto a remover board to allow for wire change without disturbing the pond plates or the bearing receptacles. The saveall system consists of stainless steel shed and saveall pans under the full length of the table.

Standard is also adding 17,000 sq. ft. of storage space located next to the company's shipping docks on the James River. The company is said to have a long-range improvement program for greater customer service.

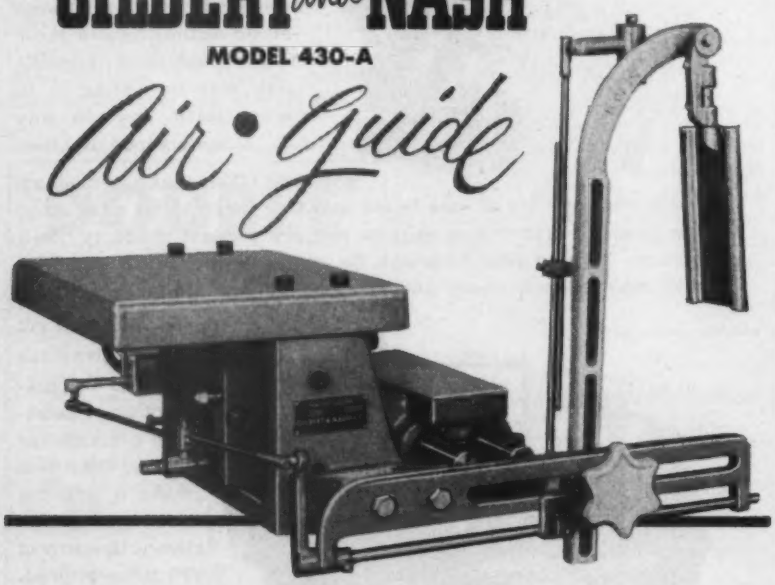
SPECIFIED by leading mills

throughout the nation . . .

GILBERT and NASH

MODEL 430-A

Air • Guide



NEW . . . by GILBERT and NASH for upright, inverted or vertical operation. Compact, the 430-A permits complete standardization of all guides on the paper machine. Fits in any space where mechanical guides are now used — over-all height is 9". No springs, and air is used for power in both directions. Should mill air supply fail, the 430-A centers at point of last correction, thereby protecting against costly wire losses.

Sold exclusively by —

APPLETON MACHINE COMPANY

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St. Regis Builds New Plant

Construction has begun on a new plant for the Superior Paper Products Co. Division of St. Regis Paper Co. At a cost of $2 million, the plant will be located on a 30-acre site in Marion, Ind., and will replace the Division's present two plants there.

Superior manufactures a full line of paper plants. It was founded in 1923 by William H. Willen. His son, Paul G. Willen, is now vice president and general manager of the Division. It was acquired in 1955 by Cornell Paperboard Products Co.

AT GREAT NORTHERN Paper Co.'s East Millinocket mill, Formex Co.'s plastic replacement for fourdrinier wires, is tested and operated successfully after extensive folding. Ordinarily shipped in a 16-ft.-long paper carton, the material was removed from the carton and stuffed in the back of a plane for fast delivery to Great Northern. Formex is now experimenting with packaging in paper tubes 16 in. dia and 37 in. length, as shown in the picture. At left is the long tube formerly used to ship fabrics to the Great Northern mill in the background.

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can you use computer control *profitably?*

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Extend use of interlocks and limiting circuitry—use digital solid-state components to extend supervisory controls, thereby minimizing effects of human error.

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Provide performance monitoring—add computing facilities to provide significant up-to-date calculations for operation improvement and maintenance scheduling.

Integrate all system elements—add start-stop control to provide full automation, the ultimate goal.

P 158-1

PULP AND PAPER DIVISION

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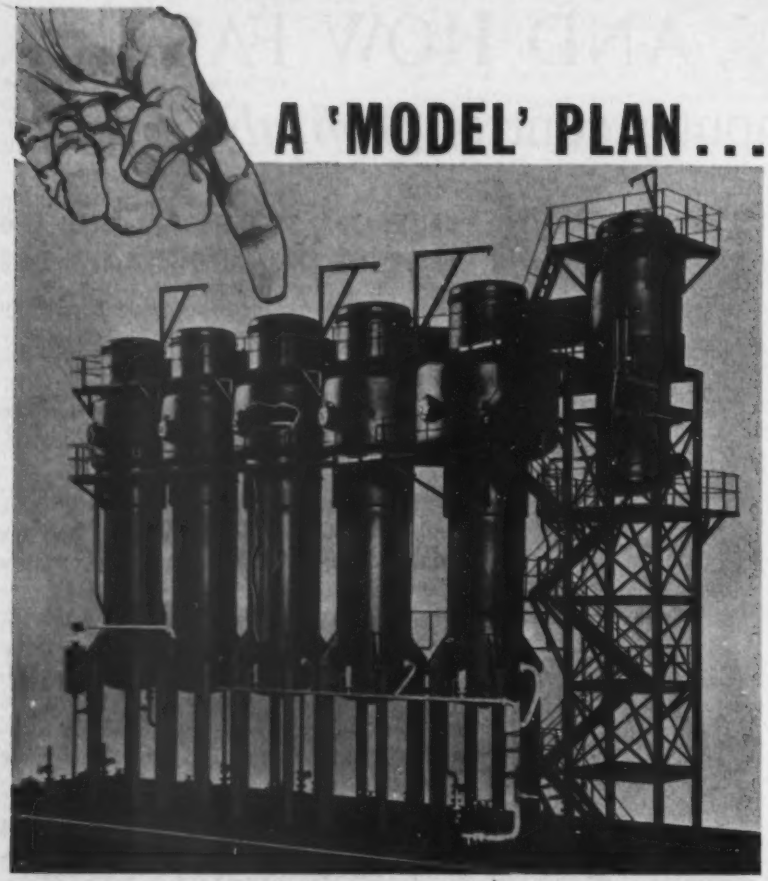

A 'MODEL' PLAN . . .

FOR LOWER OPERATIONAL AND MAINTENANCE COSTS

The illustrated scale model represents the heart of a plan to save you money—a Swenson designed Long Tube Vertical Evaporator.

Take a moment, if you will, and examine the illustration. Note the accessibility of major components for easy inspection and maintenance and the relative simplicity of the overall arrangement. Every control is in the open, easy to get to. Every inch of vapor piping laid out so that anyone can follow the pattern.

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COMING EVENTS

TAPPI

February 18-22, 1962 — 47th Annual Meeting, Hotel Commodore, New York, N.Y.

PIMA

November 30 — Michigan Division, Gull Harbor Inn, Gull Harbor, Mich.

November 30-December 1 — Pacific Coast Division Fall Meeting, Olympic Hotel, Seattle, Wash.

January 11, 1962 — Connecticut Valley Division, Publick House, Sturbridge, Mass.

January 18, 1962 — Michigan Division (Annual Papermakers Get-Together), Hotel Harris, Kalamazoo, Mich.

February 8, 1962 — Michigan Division, Hotel Harris, Kalamazoo, Mich.

February 9, 1962 — Container Corp. of America, Royal Container Corp., Santa Clara, Cal.

OTHER MEETINGS

November 21 — 11th Semi-Annual Mid-year Conference of the Manufacturing Chemists Assoc. Inc., New York, N.Y.

November 27-December 1 — 28th Exposition of Chemical Industries, New York Coliseum, New York, N.Y.

January 23-26, 1962 — Annual Meeting of the Technical Section, Canadian Pulp & Paper Assoc., Queen Elizabeth Hotel, Montreal, Que.

January 22-25 — National Plant Engineering & Maintenance Show, Convention Hall, Philadelphia, Pa.

March 13-14 — Second Symposium on Packaging of Chemical Products, Chase-Park Plaza hotels, St. Louis, Mo.

March 24-27 — The 49th Annual Convention of the National Association of Secondary Material Industries, Edgewater Beach Hotel, Chicago, Ill.

April 9-10 — 4th National Chemical & Petroleum Instrumentation Symposium, Wilmington, Delaware.

April 25-29 — Western Space Age Industries & Engineering Exposition, San Francisco, Calif.

April 26-27 — 3rd National Pulp & Paper Instrumentation Symposium, Jacksonville, Fla.

April 30-May 2 — 8th National Symposium on Instrumental Methods of Analysis, Daniel Boone Hotel, Charleston, West Virginia.

May 5-18 — International Fair Print & Paper in Europe, D R U P A 1962, Dusseldorf

May 6-9 — 5th National Power Instrumentation Symposium, Hotel Texas, Fort Worth, Texas.

June 27-29 — 3rd Joint Automatic Control Conference, New York University, New York, N.Y.

June 12-13 — Second Waste Paper Symposium, The Waldorf-Astoria, New York, N.Y.

July 17-19 — Western Packaging Exposition, Brooks Hall, San Francisco, Cal.

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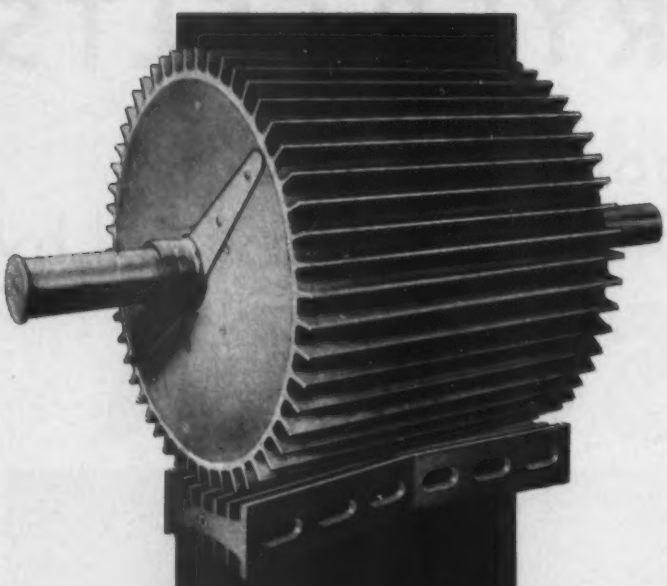

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American Can Co.

A series of eight new appointments in the manufacturing and purchasing departments of the Dixie Cup Division of American Can Co., have been announced.

William R. Schaefer, formerly Lexington plant manager, moves to the headquarters plant in Easton to become assistant supervisor, Central Planning Dept., where he will be responsible for plannng, scheduling and distribution of all items in the home products line.

Floyd Boyer, formerly Anaheim plant manager, becomes plant manager in Lexington.

John Mitchell, formerly assistant plant manager at Anaheim, was named plant manager there.

Fred Beineman, formerly cost and purchasing supervisor in the Anaheim plant, becomes Anaheim assistant plant manager.

Chris Roth, assistant plant manager at Darlington, was named assistant plant manager in Lexington.

Tom Crosby, formerly planning supervisor in the Darlington plant, was appointed assistant plant manager there.

Russ Grimshaw, formerly assistant supervisor of the Central Planning Dept. at Easton, becomes quality control laboratory manager at Easton.

Dan Dieffenderfer, formerly national quality control laboratory manager in Easton, becomes purchasing agent for paper and other major raw materials.

Standard Packaging Corp.

Lawrence L. Ellis has been appointed administrative assistant to the general manager of the company's Mills Group, Colin Gardner III.

International Paper Co.

John W. Gilbert, Jr., has been named assistant director of research for International Paper Co., New York. Gilbert was director of research for the company's Southern Kraft Division.

John A. Lyden has been named assistant to the vice president in charge of manufacturing of the company. He recently was special assistant to the assistant general manager of the Southern Kraft Division.

James B. Malloy has been appointed resident manager of the new container division plant near Pittsburgh, Pa. in New Stanton.

Robert Glynn Miller has been promoted to paper mill superintendent of the Georgetown Mill in South Carolina for the Southern Kraft Division.

New York & Pennsylvania Co. Inc.

Henry H. Bell has been appointed manager of the Johnsonburg Division of the company in Pennsylvania. Bell was formerly general superintendent and succeeds R. Neal Jones who retired.

Raymond K. Guinard has assumed the post of assistant manager. He was formerly technical director.

Francis W. Crowe, previously assistant general superintendent, has been named general superintendent.

Clinton Corn Processing Co.

John Bierie has been appointed assistant western division sales manager, with headquarters in San Francisco. Prior to his promotion, Bierie had served as district manager at Seattle, Wash.

Robert H. Boegel has been appointed manager of the New York district. Boegel was formerly assistant sales manager, primary products, at the Clinton headquarters in Iowa.

Mosinee Paper Mills Co.

C. M. Green has been elected president and general manager of this company. He was executive vice-president and general manager for the past two years.

Allied Chemical Corp.

Jack M. Blalock has been appointed manager of heavy chemical sales for this company's General Chemical Division. Blalock will be responsible for sales of aluminum sulfate used in paper making and water purification, phosphoric acid and sodium phosphates.

Blalock

Gillespie

Parkinson

Dahl

Crown Zellerbach Corp.

W. F. Gillespie, resident manager of the company's Bogalusa, La., division, has been promoted to the position of assistant vice president of the corporation. Gillespie will continue to maintain his office in Bogalusa.

C. R. Dahl, resident manager of the St. Francisville printing paper mill, has been named resident manager of the company's mill division at Bogalusa.

William E. Parkinson, will succeed Dahl as the new resident manager at St. Francisville. Parkinson has been assistant resident manager of the mill since 1960.

Leland A. Kelson has been appointed resident manager of the Lebanon, Ore., mill division. Kelson was formerly paper machine shift foreman for wrapping papers in Camas, Wash.

Clarence E. Englund has been named assistant resident manager at the West Linn, Ore., mill division.

He was formerly resident manager at Lebanon.

Wilton A. Gianotti, Jr., has been appointed assistant resident manager of the St. Francisville Paper Paper Co. mill in St. Francisville, La. He formerly was general superintendent of woodmill, finishing and services at Camas, Wash.

MacMillan, Bloedel & Powell River Ltd.

L. G. "Larry" Harris has been appointed general manager of the firm's converting operations. Harris will be responsible for operations of Sidney Roofing & Paper, Martin Paper Products, Harmac Pulp Division, Island Paper Mills and Paper Converting Division.

William E. Ryan has been appointed a public relations officer for the company. In his new capacity he will report to the executive assistant to the chairman of the board, E. L. Harrison.

Consolidated Paper Co.

T. J. Lopatka has been appointed vice-president in charge of administration. He is now responsible for manufacturing, engineering, purchasing, transportation, industrial relations and branch operations.

Black-Clawson Co.

Richard Davies has recently joined the public relations staff of Black-Clawson in New York. Davies will assist in all public relations, including media contacts.

George A. Hadlow, Jr. has been appointed to the technical sales department of the Dilts Division in Fulton, N.Y. Hadlow is experienced in the polyethylene extrusion laminating field.

Hadlow, Jr.

Davies

Frank W. Egan & Co.

James A. Gibbons has been appointed a sales engineer. He has been assigned to extrusion-coating equipment, representing the second addition within a month to the Somerville, N.J., firm's staff of sales engineers.

Gibbons

Nichols, Jr.

Nichols Eng. & Research Corp.

Douglas R. Nichols, Jr., has been elected executive vice president of this New York company. Nichols is a director of the organization and served formerly as vice president and treasurer.

Bemis Bro. Bag Co.

F. G. Bemis, Jr., director of allied operations for the company, has been elected a vice-president of the company. Bemis will continue as director of allied operations, which entails responsibility for operation

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of the company's Visinet Mill, paper specialty and plastic packaging plants. His offices will remain in Boston.

Allied Paper Corp.

U. G. Stoeffler has been promoted to the position of process development for this Chicago company. Stoeffler, in this capacity, will be primarily responsible for the development of manufacturing processes for the book paper mill divisions of the company.

Jamesbury Corp.

M. H. Reck and W. G. Hurd have been appointed as the firm's sales manager and assistant sales manager respectively.

Reck

Hurd

Ware

Bonnell

Penick & Ford Ltd.

John K. Bonnell and Frank Ware have been appointed as paper mill representatives for the company's Corn Refining Division. Bonnell will call on paper and corrugating mills in Minnesota and Wisconsin. Ware will call on the mills in Chicago, Wisconsin and the Upper Peninsula of Michigan.

Nekoosa-Edwards Paper Co.

John O'Brien was named mill manager. He will be responsible for over-all operation of the Potsdam, N.Y., mill.

Russell Elston has become technical superintendent, responsible for

Continued on page 568

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Influence of chemical constituents on pulp properties

A study was made at the Australian Division of Forest Products, on the influence of chemical components on the papermaking properties of pulps made from Eucalyptus regnans. One of the starting materials was pulp prepared by the cold caustic soda process, and then subjecting this, for various time periods, to treatment with acidified sodium chlorite solutions. Thus, products were obtained in which the lignin content ranged from 2 to 22 per cent. As the lignin content decreased, the strength properties increased, and there was no evidence that there was an optimum lignin content that could be correlated with maximum strength properties. It is apparent that the lignin content should be reduced as fully as possible without, however, seriously damaging the fibers. A chlorite holocellulose was also prepared directly from eucalyt shavings; this was then treated with various concentrations of cold alkali so as to remove varying amounts of the alkali-soluble polysaccharides. In every case this treatment lasted one hour. At alkaline concentrations below 0.4 per cent, the residue did not lend itself to complete defibration. When the holocellulose was extracted with 0.4 per cent sodium hydroxide, the "pulp" yield (based on the wood) was 70 per cent. This residue then contained 23 per cent of polysaccharides soluble in 10 per cent sodium hydroxide. When this pulp was treated with 5 per cent alkali, the yield was reduced to 52 per cent (with retention of 4 per cent polysaccharides still soluble in 10 per cent alkali), and showing no significant change in its strength properties. When however the holocellulose was treated with higher alkali concentrations, although only small amounts of additional hemicelluloses were removed, the pulps had much lower strength properties, and they also showed a much poorer response to beating. These data do not support the belief that the maximum strength properties are obtained at some optimum hemicellulose content. On the other hand, when the alkali-soluble polysaccharides are reduced below a certain critical point (approximately 4 per cent) the strength properties of the pulp decreased. Increasing crystallinity of the fiber surface, due to the removal of amorphous hemicelluloses, and (when higher concentration of alkali are used) the conversion of "Cellulose I" into "Cellulose II", reduced the opportunity for interfiber bonding, and thus caused a reduction in sheet strength.

Eighteen references. A. J. Watson, **APPITA 14**, 144-158 (1961).

Tests for sulfite spent liquor in mill waters

Methods for the identification of sulfite spent liquors in diluted form were examined critically. A number of methods used in testing for lignosulfonates were reviewed, and it was shown that in order to obtain unequivocal evidence that small amounts of spent liquor were present, a good test for the sulfonic acid group, as well as the ability to convert the organic matter in the liquor into vanillin, appeared essential. Pressure oxidations yielding vanillin however were insufficient to establish the presence originally of spent liquor. Certain swamp-waters can also give rise to vanillin. Nor can the analyst rely on infra-red or ultraviolet spectra or fluorescence reactions. The sulfonic acid group is best tested for by potentiometric titration, carried out after passage of the solution through a suitable deionizing column. This frees all the strong water soluble acids, and so the titration with alkali gives simply the total acid value. Any mineral acids must therefore be identified and determined separately. In an example given by the authors, sulfuric and hydrochloric acid were both present, and their amounts were known. Thus in the sample titrated, their (milliequivalent) amounts were subtracted from the total amount of acid found, and this difference was due to the lignosulfonates present, which is thus shown qualitatively, but not quantitatively (since equivalent weights for the lignosulfonic acid are unknown). Another method for showing the presence of sulfonic acid groups by a pressure decomposition with the formation of sulfurous acid is also discussed, but was found to be less reliable.

Rudiger Hornke and Eduard Heinisch. **Das Papier 15**, 186-8 (1961) (In German).

Release of wet webs from various surfaces

The author describes a low-speed stripping apparatus by means of which wet paper webs can be stripped from such surfaces as machine wires, granites (of various types), rubber samples (similar to those used in covering upper press rolls) and metal surfaces, included among which is cast iron similar to the type used in the manufacture of MG cylinders. The general conclusions reached were that nearly all of these surfaces showed a relationship for stripping tension and take-off angle that conformed broadly to the stripping equation E.g. the work of separating newsprint webs (containing about 20 per cent fiber) from wires was about 2000 ergs per cm.^{2}

For kraft pulps (at 600° Canadian standard freeness) the work of stripping was about 700 ergs/cm^2 — however this value depended on the water content of the web, and this was especially true in the case of kraft. When newsprint (at a moisture content similar to that obtained after the last press) was stripped from granite, the work of separation varied from 1100 to 3000 ergs/cm^2. Different types of granite showed differences of as much as 60 per cent.

Due to a reduction in the basis weight, in the press section, the work of separation is responsible for an important part of the total tension, even at high machine speeds. The work of separating webs (with moisture contents similar to those at the first press) from rubber, is of the order of 200 to 500 ergs/cm^2, with different rubbers showing significant differences. The stripping tensions from metal surfaces depended on the moisture content of the web and the methods used in applying the sheet to the surface.

In separating newsprint from cast iron, when the moisture to solids content was 0.9 to 1.0, it was about 10,000 ergs/cm^2. From mild steel and from bronze (using a wetter sheet (with the ratio of water to solids of 1.77 to 1.0) the work required was respectively 3700 and 1000 ergs/cm^2. Temperatures of the metal surfaces have an effect on the work of stripping. The stripping tension and the work of separation rise to

a maximum at about 60 per cent dry weight of the paper web, and then decrease rapidly.

Eight references, six tables, one figure and 21 graphs. J. Mardon. **APPITA** 15, No. 1, 14-33 (July 1961).

Condenser paper in the U.S.S.R.

A study was made of the effects of ash on the electrical conductivity of kraft pulp hand sheets and on the dielectric loss angle of sheets treated with mineral oil. Samples containing various amounts of ash were prepared by electrodialyzing a pulp which originally contained 0.9 per cent ash; the electrical conductivity of the dried handsheets decreased with decreasing amounts of this ash, and with increasing acidity until a value of 0.25 to 0.33 per cent ash was reached. However when the ash content was reduced further, conductivity increased probably due to a further increase in the acidity (i.e. free carboxyl groups) and to the anions remaining in the pulp.

In oil-impregnated sheets, the rate of increase in the dielectric loss angle with temperature was reduced by use of accelerated aging at 120° C. The absolute values of the dielectric loss angle decreased as the ash content decreased. A usual optimum ash content was 0.12 per cent, but the ash content could be decreased further if deashing was carried out under conditions preventing an undue increase in acidity. Under industrial conditions, a pulp of low ash content could be obtained by using demineralized water and by mild chemical refining.

A chemical treatment that removes the middle lamella and a portion of the primary layer of the cell wall will also remove a large portion of the mineral matter of the pulp. This is quite important when hardwoods are to be used in the manufacture of condenser paper. Vacuum impregnation of the chips prior to cooking, and digesting with white liquor of increased alkali content, reduced both the lignin and the pentosans and improved the dielectric properties of the product.

Nine references. B. G. Milov and S. K. Kitaeva. **Bumazh. Prom.** 36, No. 1, 9-12 (1961) (in Russian) through **Abstr. Bull. Inst. Paper Chem.** 32, 59 (Sept. 1961).

Indices of delignification in wood pulps

The authors made a critical study of the methods that often serve as indicators of delignification, **viz.** the Roe number, the Oestrand number, (cf. Johansson, **Papier fabr. 32**, 172, (1934), the TAPPI permanganate number, and the Kappa number. There were applied in the case of 120 kraft pulps made under varying conditions, from 18 conifers, 12 hardwoods (mostly tropical) and from three species of bamboo.

The data were compared with results obtained by means of Klason lignin determinations. Apparently the Kappa numbers gave the most satisfactory correlations with the lignin values, especially when applied to this wide variety of kraft pulps. The approximate lignin values could thus be calculated from the Kappa numbers, which also gave indications of the expected chlorine consumption in bleaching (using either a three- or a five-stage bleach).

In a bleached pulp, the reflectance was not correlated with the Kappa number, but this correlation did obtain with unbleached kraft pulps. The data are discussed fully.

E. L. Raekelboom and J. R. Istas. **Industrie Chim. Belge** No. 6 1961, 788-795 (in French, with Dutch, English and German summaries).

Foam prevention in the paper industry

A review is given of physical and chemical aspects of foam formation. The use of surface active agents often leads to foaming. Some of the methods used in testing foam formation and its stability and abatement are described briefly. Special emphasis is placed on equipment used in the laboratory and in the mill for gaging foam formation, and these pieces of apparatus are described quite fully. Foaming may occur during stock preparation, on the paper machine and also in subsequent operations.

Means of combatting (or eliminating) foam may be purely physical or may entail a variety of anti-foaming agents. (Those described by the author in the present experiments are usually agents manufactured by the Badische Anilin und Soda Fabrik). Such reagents may increase the surface tension by the removal of compounds that serve as foam stabilizers or that cause foam to form at the interface. They may also decrease the activity of surface active agents at the interface.

The limitations of such solvents as Diesel oil and kerosene in combatting foam are outlined. There are also certain surface active agents that actually inhibit foaming, and the author discusses this seeming paradox. A brief section deals with foam abatement during paper coating operations.

Nineteen references. Franz Poschmann. **Das Papier** 15, 295-301 (1961) (in German with brief English and French summaries).

Load elongation behavior of M.G. paper

The load-elongation properties of M.G. (machine glazed) paper in the machine and the cross-machine directions were studied, using 41 samples of varying quality, and prepared both from kraft and sulfite pulps from four different mills. Relationships between tensile strength anisotropy, extensibility anisotropy, primary slope and secondary slope ratios were studied. Apparently there was no correlation between anisotropies of tensile strength and extensibility, or between extensibility and primary slope ratio. On the other hand there was a high degree of correlation between the tensile strength anisotropy and primary slope ratio ($r = 0.947$, as shown in Fig. 1). The two ratios of the machine direction to the cross machine direction were approximately equal, thus indicating that the elastic strain is approximately the same in both of these directions in the sheet.

A multiple correlation analysis of the relationship between the secondary slope ratio and the anisotropies of tensile strength and extensibility yielded a correlation coefficient of 0.966. Consequently the secondary slope ratio can be calculated from the coordinates of the rupture points with a high degree of precision. These data are discussed at length.

Four figures and five references. A. P. Arlov. **Norsk Skogind.** 15, 200-205 (1961) (in English).

Light typographic drying oils from tall oil

The main disadvantage of printing with vehicles based on the alkyd resins that are modified by tall oil, is their dark color. This difficulty could be overcome by replacing crude tall oil, by a product obtained from tall oil by distillation at about 8 mm. Under these conditions, clear, pale vehicles could be formed from alkyd resins containing 64 per cent of the distillate, 14 per cent glycerol, and 22 per cent phthalic anhydride, using about 0.05 per cent litharge or pyrolusite as catalyst. The latter is based on the sum of the other components.

In this preparation, the distillate and the glycerol were heated together for 1 hr., with the catalyst at 160° C. Then phthalic anhydride was added and the entire mass was heated 6 to 7 hrs., at 200 to 210° C. The acid number of the final resin should not exceed 20.

Twenty references. M. F. Sorokin. **Khim. Prom.** No. 2, 144-149 (1959) (Original in Russian); through **Abstr. Bull. Inst. Paper Chem.** 32, 55 (1961).

Acids from fermented spent liquor

The continuous fermentation of sulfite spent liquor was carried out with **Propionibacterium arabinosum** in a system in which the bacterial population in the suspension (3.0×10^8 cells per milliliter) was circulated, and in part by colonies that were visible on limestone lumps that had been added so as to maintain the optimal pH in the liquor. When the bacterial population was once established no further growth substances were required.

Recycling a part of the fermented liquor proved advantageous in obtaining a rapid adjustment of the pH, by the interaction of calcium salts of the organic acids with any acidic components of fresh spent liquor. Calcium lactate which was present in the recycled liquid apparently stimulated the rate of conversion of fermentable sugars into the volatile acids. It also helped in controlling the pH. This conversion reached an efficiency of 83 to 86.5 per cent within 55 hrs. The volatile acids obtained were propionic and acetic, in the molar ratio of two to one.

Thirteen references. M. E. Martin, M. Wayman and G. Graf. **Canadian J. Microbiol.** 7, No. 3,341-6 (1961); through **Abs. Bull. Inst. Paper Chem.** 32, 73 (1961).

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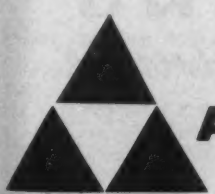

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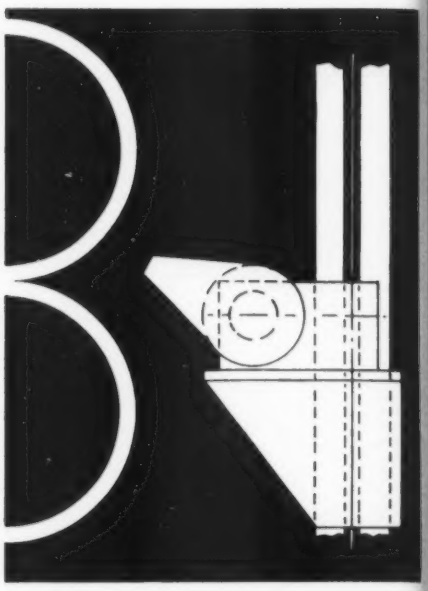

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Dr. Melvin Nord

Digestion of Wastepaper Pulp

U. S. Patent 2,977,274, issued March 28, 1961, to Robert F. Hollis and assigned to Alton Box Board Co., describes a method of and apparatus for heating and mechanically working wastepaper pulp.

A relatively high consistency stock is simultaneously heated and diluted by direct contact with hot water or steam, so as to reduce the consistency to a good level for refining; the pulp is then refined while held under pressure and high temperature and finally is dewatered under pressure and at high temperatures in an enclosed press. The stock issuing from the press at relatively high consistency, for example forty percent, would normally be diluted in relatively cooler water, while the hot water separated at the press may be recycled.

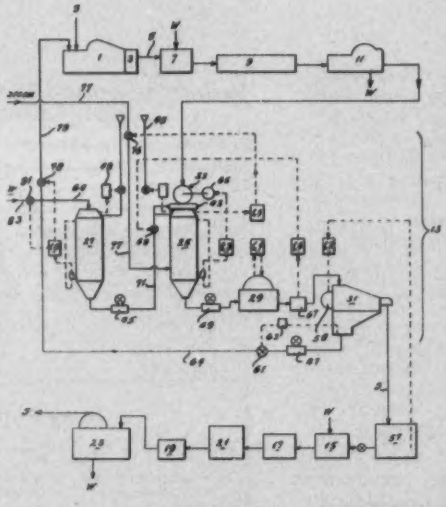

Figure 1

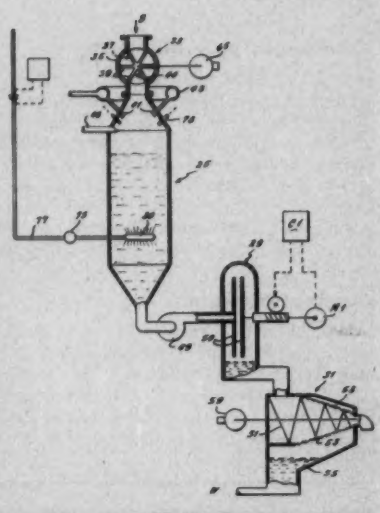

Figure 2

As shown in Figures 1 and 2 the thermal apparatus includes a stock receiver 25, a water receiver 27, a refining engine 29, and a press 31. The water outlet or discharge from the press is sealed and adapted to withstand pressure, and the hot water therefrom is fed back to the water receiver 27, which functions as a reservoir supplying the stock receiver. In other words, the entire system is pressurized so as to conserve heat or energy. The heat input for the stock may be indirect by heating at the water reservoir 27 or by direct application of steam into the stock receiver 25.

The stock receiver 25 is a vertical tank having an outlet at the bottom and a pressure-containing input unit 33 at the top. A motorized star valve is used at the input. The valve includes a housing 35 containing a rotor 37, which is formed with pockets 39. The incoming stock is forced into a top pocket at relatively low pressure and is subsequently dumped as the pocket moves around to the bottom position. A small steam nozzle is arranged to squirt a small jet of hot water into the lower pocket at 40, to insure complete dump of the stock at the bottom position.

The stock receiving tank is only partially filled with hot water so that the pocket-sized gobs of stock discharged from the valve drop through a gas phase before entering the liquid. The gobs of stock are broken up as they drop by nozzles 41 arranged peripherally about the tank immediately below the valve and above the liquid level. The nozzles 41 are connected to a ring-type manifold 43, as shown, which is supplied with hot water. Also, the nozzles 41 are preferably arranged to apply a slight whirling jet effect to the stock in the downward direction so as to aid non-condensible gas release. A pump 45 connected in the supply line to the manifold provides the spray head or energy.

Heating is by direct injection of steam at 30 into the stock receiver 25.

The output from the stock receiver 25 is pumped at 49 into a refining engine, which has the function of breaking up the small fiber units which have not otherwise separated, loosening solid non-soluble contaminants so that they may be removed subsequently and to some extent smearing the non-soluble thermoplastic constituents such as asphalt.

The press 31 discharges the high-consistency stock into a chest 57, from which the stock is drawn for further processing. Automatic control is then obtained by providing a controller C2, which is arranged to sense variations of the level within the chest 57 and adjust a variable speed drive 59 for the press accordingly.

Paper making apparatus

U.S. 2,979,130, issued April 11, 1961, to Robert E. Smith and assigned to the Sandy Hill Iron and Brass Works, provides apparatus for controlling the flow of paper making stock onto a sheet forming element.

The apparatus is shown in Figure 1. Paper making stock is supplied the inlet 10 of the head box at a predetermined constant rate by a pump. Simultaneously, air under pressure and at a constant rate of flow, is supplied to the head box through pipe 60.

The lip of the slice is adjusted and gradually closed to restrict the flow of stock from the outlet, and to the wire. Thereby, the level of stock in the head box rises with an increase of pressure within the box, and results in increasing velocity of stock from the outlet.

As the stock reaches a certain level, a float in chamber 44 closes a valve located in it. This causes instrument air entering through line 92 to build up in pressure, acting on the diaphragm so to throttle the discharge of air from the head box via line 62. Thus there is an increase in air pressure within the head box. As the level of stock in the head box decreases, the sensing valve operates the air discharge mechanism, so that pressure within the head box is reduced.

A transparent tube 120 extends vertically and has its lower end connected to the lower portion of the chamber 44. This tube may be calibrated as a hydrostatic gauge to visually indicate pressure conditions within the head box.

Thus, a predetermined level of stock and stock velocity at the outlet may be maintained for a certain speed of wire, stock characteristics and other variables.

Continuous pulp bleaching

U. S. 2,968,589, issued Jan. 17, 1961 to George H. Saunders and Harold S. Hedberg, assigned to Kimberly-Clark Corp., provides a continuous pulp bleaching method in which a 2-8 per cent suspension of fibers at 45 to 70° C. is bleached with hypochlorite in alternate agitating and calming zones.

Sufficient alkali is injected into each agitating zone to maintain a pH of 9.5-10.5. Before entering the final agitation zone, acid is instead injected into the suspension, to destroy the excess hypochlorite and to bring the pH to 4-7.

Laminated paper

U.S. 2,975,094, issued March 14, 1961 to William E. Anderson and assigned to Riegel Paper Corp., provides a moisture-proof packaging paper.

The paper consists of a lamination of two sheets of unilaterally-unglazed sulphite-bleached paper, a thin film of paraffin between the sheets and in contact with the glazed surfaces of the sheets, and a thin layer of paraffin covering one of the exposed, unglazed surfaces of the laminate. The paraffin used has a melting point of between 131° and 145° F.

Synthetic fiber paper

U. S. 2,971,877, issued Feb. 14, 1961 to Hanns F. Arledter and assigned to Hurlbut Paper Co., provides a process of preparing a synthetic fiber paper.

The fibers used consist of 70 to 90 per cent of slightly acid soluble synthetic fibers (either synthetic resin fibers or metallic fibers), and 10 to 30 per cent of acid soluble fibers (cellulosic fibers or glass fibers). These are made into a paper web. The paper web is then treated with an acid in which the acid soluble fibers are soluble, to remove them from the web.

Surface decorated fiberboard

U. S. 2,971,856, issued Feb. 14, 1961 to Edgar A. Lauring and assigned to Minnesota & Ontario Paper Co., provides a method of coating and decorating a hot pressed vegetable fiber board.

A pigmented oil coating composition is applied to the fiber board which is at a surface temperature of 250° F. The coating composition is dried for a predetermined time by the internal heat of the board. The coated board is then passed under a rotating brush while the surface of the coating is partially dried.

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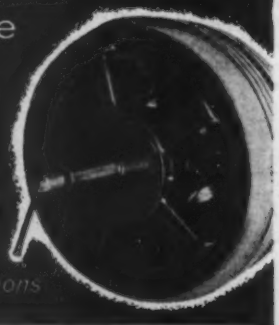

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Other Patents of Interest

Subject	Inventor or Assignee	Patent No.	Date
Production of wood fiber	Weyerhaeuser Co. et al	2,972,171	2/21/61
Manufacture of paper	Dow Chemical Co.	2,972,560	"
Stock supply system for a paper machine	Black-Clawson Co.	2,973,034	2/28/61
Cartons	Coates Board & Carton Co. Inc.	2,973,086	"
Carton connector	New Haven Board & Carton Co.	2,973,128	"
Dual locking construction for paperboard wrappers	Continental Can Co. Inc.	2,973,129	"
Separable plural carton	Standard Packaging Corp.	2,973,130	"
Apparatus for defibering paper pulp	Improved Machinery Inc.	2,973,153	"
Feeding paper board blanks	Mead Corp.	2,973,201	"
Container for wire or tubing	Crown Zellerbach Corp.	2,973,858	3/7/61
Corrugated packaging material	Kimberly-Clark Corp.	2,974,716	3/14/61
Cylinder machine	Risaku Okawa et al	2,974,726	"
Molded pulp packaging for bottles	Keyes Fibre Co.	2,974,788	"
Egg case package	Diamond National Corp.	2,974,789	"
Bottle carriers	David Levkoff et al	2,974,827	"
Egg carton	Diamond National Corp.	2,974,842	"
Food container	Diamond National Corp.	2,974,843	"
Packaging support	Lane Container Co.	2,974,844	"
Carton having pour spout with reclosure	Diamond National Corp.	2,974,845-6	"
Egg cartons	Diamond National Corp.	2,974,847	"
Carton	Lengsfield Brothers Inc.	2,974,848	"
Hand set-up carton	Diamond National Corp.	2,974,849	"
Combined shipping container and dispensing receptacle	Owens Illinois Glass Co.	2,974,850	"
Cartons	Diamond National Corp.	2,974,851	"
Dispensing carton	American Can Co.	2,974,852	"
Easily opened and reclosed carton	Diamond National Corp.	2,974,853	"
Reclosable carton	Container Corp. of America	2,974,854	"
Resin coated paper	Dow Chemical Co.	2,975,074	"
Bleaching of pulp	Canadian International Paper Co.	2,975,169	"
Locking construction for cartons	Continental Can Co. Inc.	2,975,891	3/21/61
Chick boxes and spacing cleats	Lawrence Paper Co.	2,975,951	"
Container closure	Richard B. Tamarin	2,975,952	"
Carton with cover lock	Container Corp. of America	2,975,953	"
Easy-opening setup box	George C. Sparks	2,975,954	"
Gummed paper	Minnesota Mining & Mfg. Co.	2,975,074	"
Treatment of Kraft black liquor	West Virginia Pulp & Paper Co.	2,976,273	"

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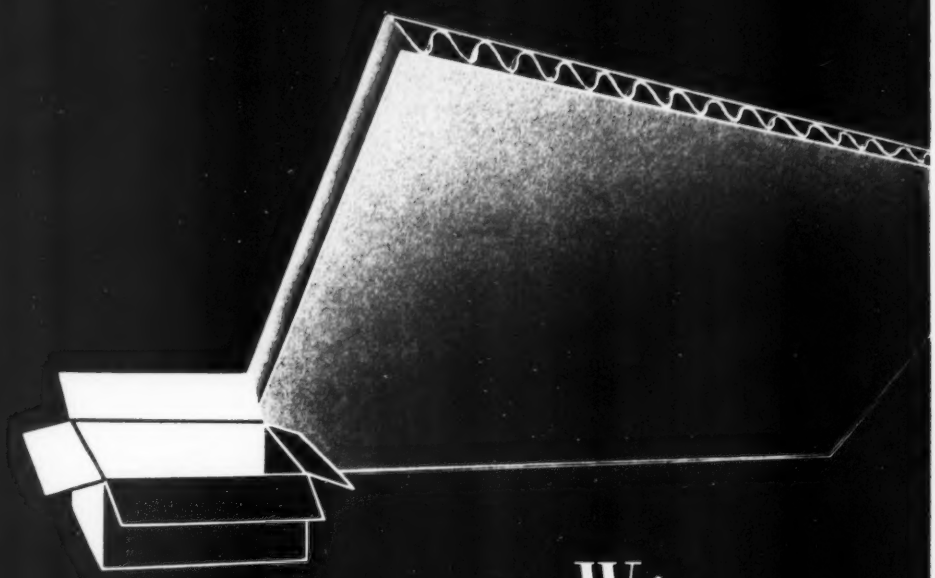

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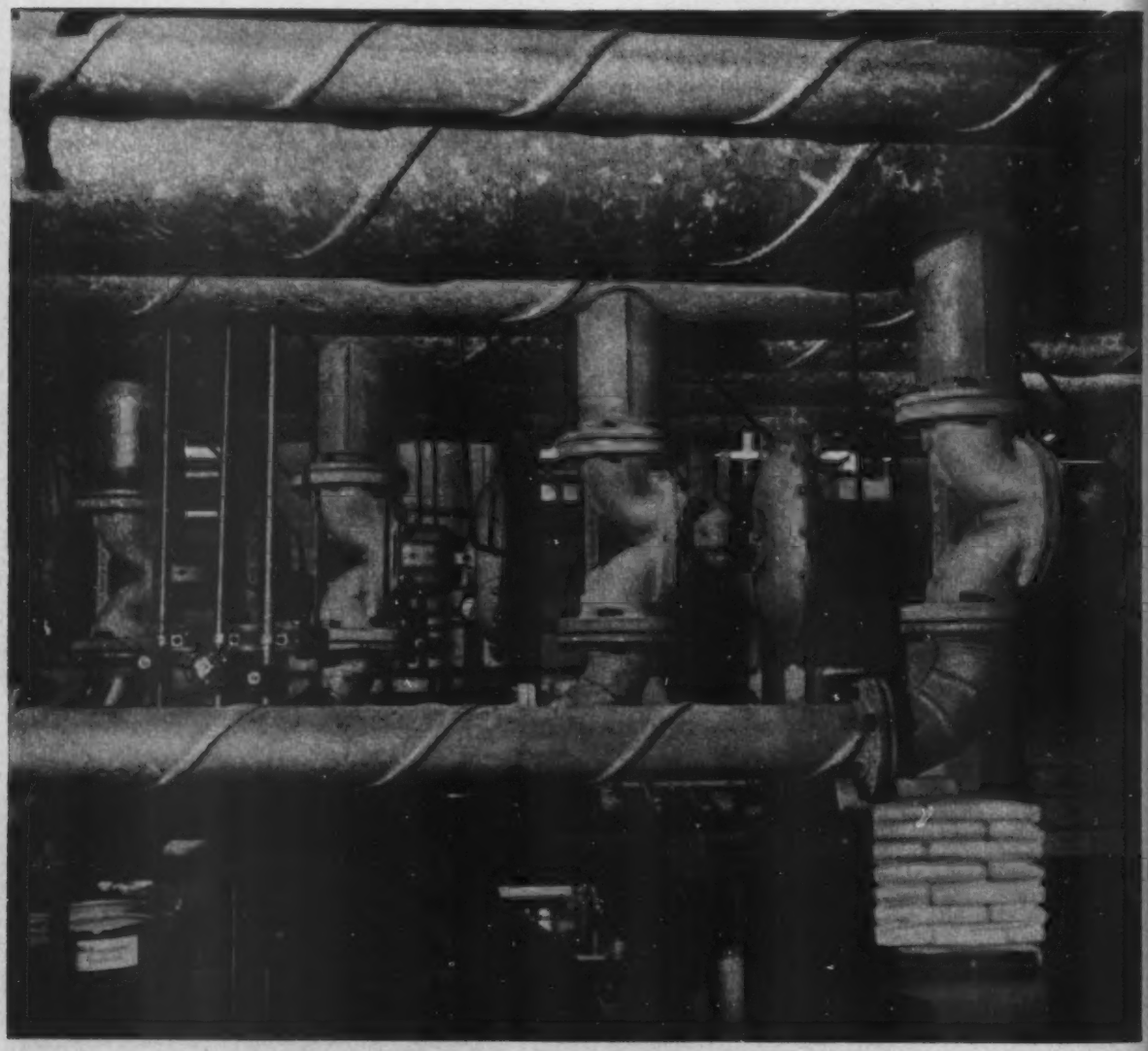

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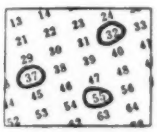

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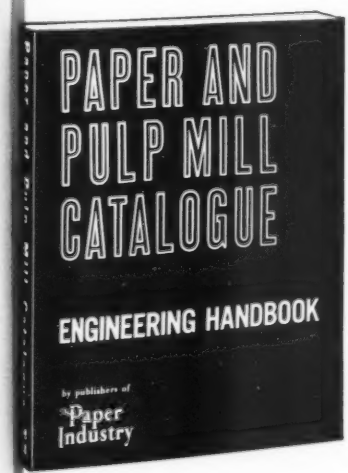

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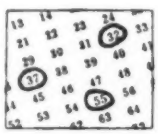

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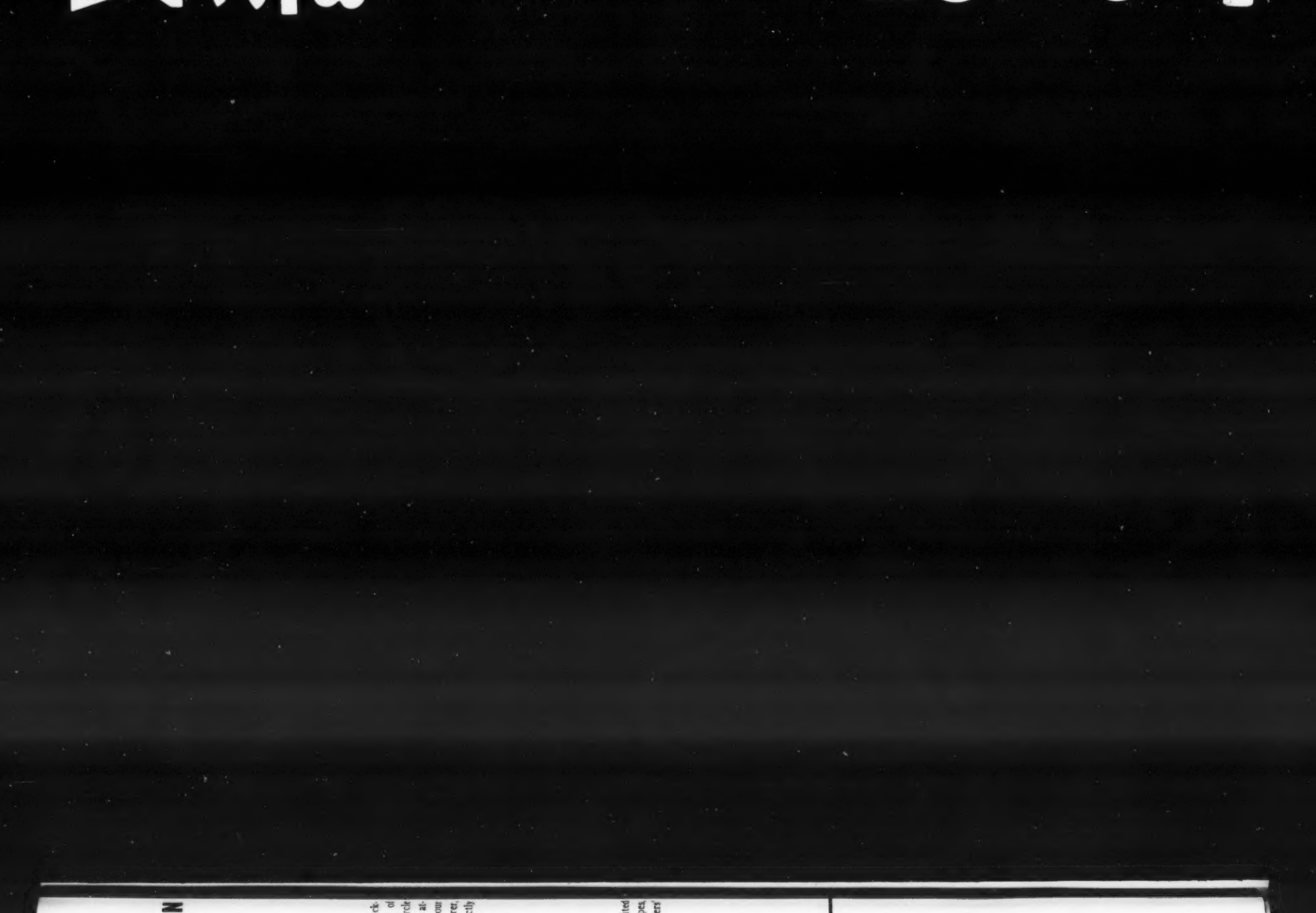

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A new loader for operation over rough terrain and unpaved yard areas, is termed "Cary-Lift." It is able to reach out and load rail cars or trucks entirely from one side, with a maximum fork elevation of 144 in. Power is supplied by a 73 hp gasoline engine. — Pettibone Mulliken Corp.

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Belt line

Four new papermaker belt lines have been introduced to provide a 22 per cent or more increase in power transmission capacity. This specialized power transmission belting is flexible, nylon-type polymer core. To the core is bonded a special chrome-tanned leather which provides a friction surface gripping power. — Extremultus

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Organic dispersives

A family of organic dispersives specially formulated to minimize adherent sludge formation in boilers and recirculating cooling systems, is now available. The dispersives are dry powders blended to cover a wide range of dispersing properties. Their prime role is preventive rather than the cleaning out of old deposits. — Hagan Chemicals & Controls Inc.

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Experimental thickener ASE-95, is an acid-containing acrylic emulsion copolymer, useful for thickening aqueous and polar-solvent systems such as those used for paper and specialty coatings. This thickener is effective as a suspending agent for pigments, abrasives and other finely divided solids; as an emulsifier and emulsion stabilizer for a wide variety of solvent water systems; and as a stabilizer for compounds based on nonionic surfactants. — Rohm & Haas Co.

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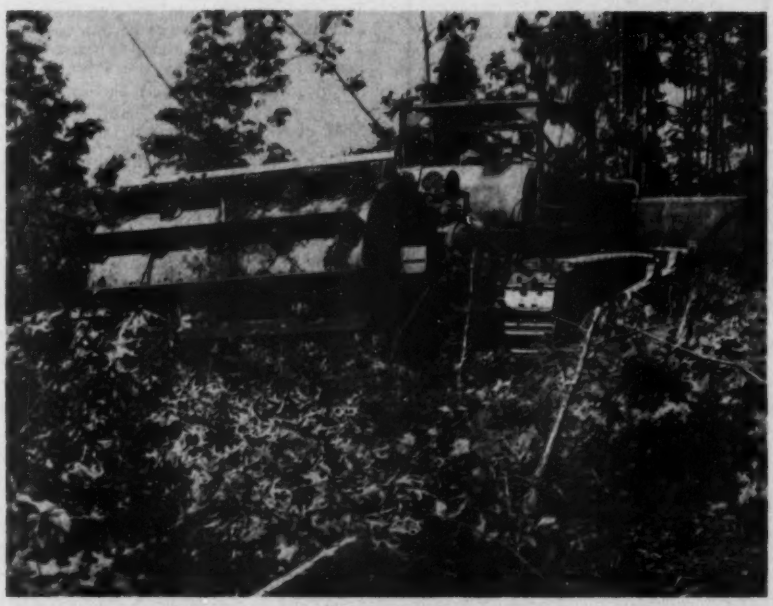

Rolling chopper

A new model chopper has been added to the line of rolling choppers. It is designed for use with tractors of 130 hp and more. A ten ft. swath can be cut in vegetation up to 8-in. in diameter. Growth is cut, fractured and partially buried to speed decomposition. The cutting edges are reversible. — Fleco Corp.

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Graph stamp kit

This graph rubber stamp kit includes three graph stamp patterns, and ink pad. It can be used for curve tracing for loci problems in polar coordinates and transformation to polar coordinate problems, as well as for research problems and analytical data. — Edmund Scientific Co.

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Polyethylene resins

Three new types of high-density polyethylene resins are now available for paper coatings. They are said to bring a maximum rigidity and flexural stiffness to film and paper. — Hercules Powder Co.

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The swimming roller consists of two component parts: a tubular cylinder with a honed bore made of steel or chilled iron, and a stationary non-rotating shaft around which the tubular cylinder rotates. This roller is said to allow for the elimination of deflection on machine calendars and super calendars. — Louis P. Batson Co.

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alyzer is comprised of an analyzer unit and a potentiometer indicator or recorder calibrated in ppm chlorine residual. The two components occupy identical housings that can be mounted flush on a panel or can be installed separately from each other. — Fischer & Porter Co.

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This nonshrinking, self-curing rubber is used for repair of conveyor belting, hose, and other rubber products; making thick or thin gaskets in place; lining chutes, tanks, pumps, and other machinery subject to severe abrasion; making rubber products without heat, pressure, or molds; for vibration dampening or machinery mounts and for nonshrinking caulking compounds. The two types available are the putty and liquid types. — Devcon Corp.

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Low-foaming surfactant

A new series of aliphatic alcohol-ethylene oxide adducts have been modified by termination with a hydrophobic group to reduce foaming. Supplied as a clear, pale yellow liquid, individual selection of the proper member of the series will depend upon their specific application in use. — Jefferson Chemical Co. Inc.

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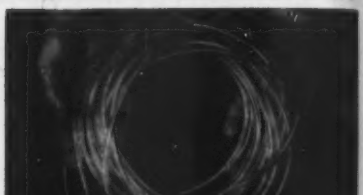

Transparent tubing

This transparent polyvinyl chloride tubing was developed to combat corrosion in the transmission of gasses, acids, alkalies, petroleum products and other active chemicals and materials. Two reinforced versions are available for use with high pressures and to resist crushing. — Newage Industries Inc.

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Three new latices are now available which can be cured with zinc oxide

Continued on page 559

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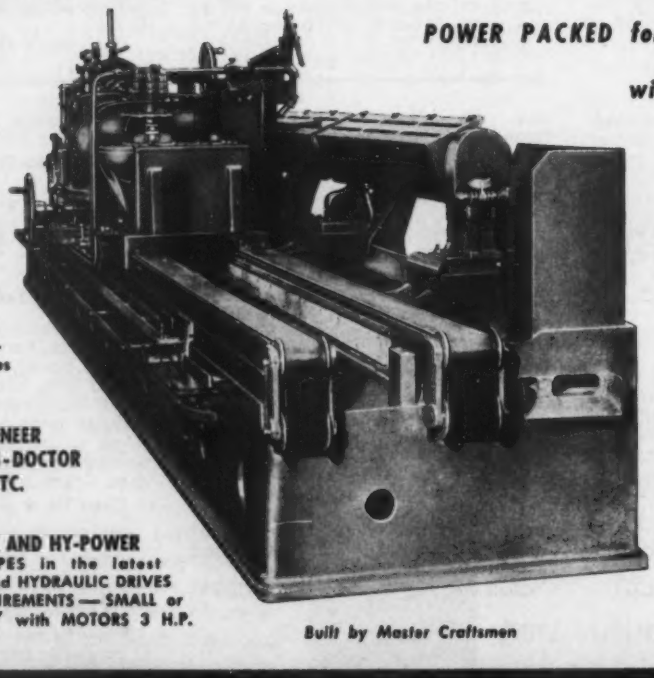

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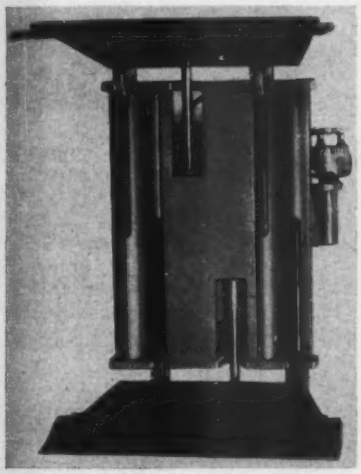
NEW PRODUCTS

Continued from page 558

as well as conventional curing materials. Pliolite latex 440 is a high-solids water dispersion of a carboxylic modified styrene/butadiene copolymer. It has shown potential as a paper coating and saturant.

Pliolite latex 460 and Chemigum latex 520 have similar properties and can also be used for paper saturants and coatings. — Goodyear Tire & Rubber Co.

Circle No. 14 on Readers' Service Card



Paper roll clamp

A paper roll clamp to handle rolls up to 60 in. in diameter and up to 5000 lbs., is now available. Compact and light in weight, the roll clamp has nylon bushed arm carriers and nylon periphery bearings. Increased clamping force has been achieved without a corresponding increase in hydraulic pressure. — Cascade Mfg. Co.

Circle No. 15 on Readers' Service Card

Optical brightener for paper

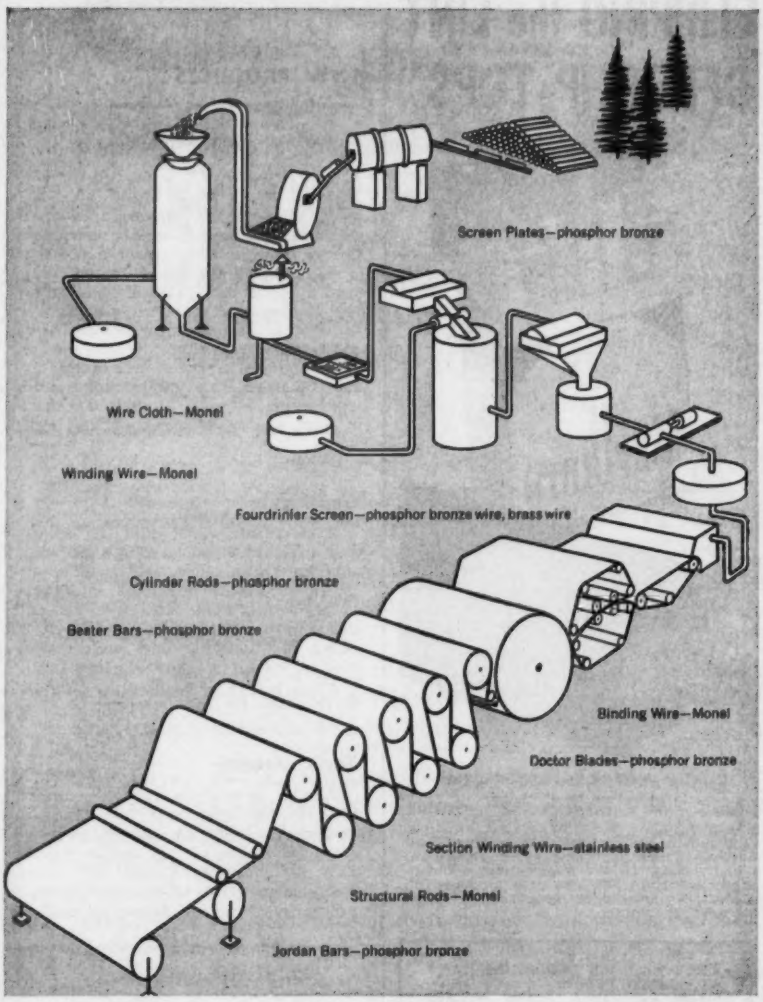
A new optical brightener designed especially for use in paper manufacture, is called Hiltamine Arctic Paper White. It is said to be a clean, odorless, neutral solution containing no flammable solvents, and it is stable to acid and alkali at a pH from 2 to 12. It is recommended for paper application in the size tub or beater or at the calendar. — Hilton-Davis Chemical Co.

Circle No. 16 on Readers' Service Card

Electric elevating truck

Power steering and a second set of controls located on the elevating carriage allows the driver of the one-man

Continued on page 560



Why most paper is screened, beaten, dried, doctored and formed on Porter alloys

For exceptional resistance to wear and corrosion, count on Porter to supply the *right* alloy for critical paper machinery components. For Jordan Bars, Doctor Blades and other vital paper machinery equipment, Porter alloys have unmatched strength and durability—feature exceptional machineability and reworking characteristics, and will not discolor paper pulp.

Long known to the industry as the world's largest producer of phosphor bronze Fourdrinier wire, Porter is also your *single reliable source* for a wide range of special alloys in 8 basic groups of wire, rod and strip . . . phosphor bronze, nickel silver, cupro nickel, brass, stainless steel, nickel, Monel and Inconel.

Ask for a free copy of "Alloys for Industry" describing these alloys. Write H. K. Porter Company, Inc., Riverside-Alloy Metal Division, Riverside, N. J. Or check the Yellow Pages for our nearest sales office. Where there's paper made—there's Porter.

PORTER **RIVERSIDE-ALLOY METAL DIVISION**
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For more data circle 140 on Post Card

FLIPPING the LINT OFF "FLIP-TOPS"

Jenkins' METLKOR Web Cleaning Brush of DuPont Tynex Nylon

The gravure production plant of the Downingtown Paper Box Company, Downingtown, Pennsylvania is an engineering triumph. Here, Marlboro "flip-tops" are produced on Champlain presses at speeds up to 2400 cartons per minute.

HERE'S WHAT THE DOWNINGTOWN PAPER BOX COMPANY SAYS: Mr. George J. Wolfer, Gravure Supt. says: "Jenkins' METLKOR brushes are contributing to the overall economy and quality that is so important to our production. When we reorder brushes, they will be Jenkins' METLKORS."

HERE'S WHAT THE MANUFACTURERS OF THE CHAMPLAIN INLINE GRAVURE EQUIPMENT, OF HARRISON AVENUE, ROSELAND, N.J., SAY: "The Jenkins' METLKOR brushes used in the web cleaning process of our Champlain inline gravure equipment are superior in performance and efficiency and are providing satisfactory and economical operation for our customers all over the world."

JENKINS' BRUSHES FOR PRINTERS

Dampener Roll Cleaning • Cylinder, hold down • Web Cleaning • Dusting • Removal of anti-offset powder • Feed. PAPER MILL BRUSHES: Conveyor Cleaning • Blanket Washer • Fourdrinier Wire Cleaning • Polishing • Coating • Dusting • Dampening • Spray • Sieve • Feed or Carrier • Static Elimination • Flocking • Felt Cleaning • Paint Brushes • Floor Sweeps • Void Detector

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For more data circle 141 on Post Card

NEW PRODUCTS

Continued from page 559

truck to leave his conventional operating station. Built-in safety devices include controls which govern the travel speed and limit the elevated height, and a "dead man" pedal which applies the brakes and cuts all electrical circuits when the operator leaves his normal steering position. When the platform controls are not in use the truck can be used in normal pallet handling operations. — The Raymond Corp.

Circle No. 17 on Readers' Service Card

Seal gum

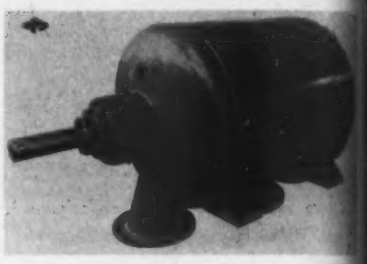
A new front seal gum for adhesion on all grades of envelope papers, is now available. Flat seal may be used in existing gum boxes on all types of rotary equipment. The gum is clean machining and performs without difficulty in inserting and metering machines. — Morningstar-Paisley Inc.

Circle No. 18 on Readers' Service Card

Tank cleaner

A new reversible hydraulic rotor jet unit for cleaning tank interiors is announced. Operation of the reversible rotor jet is completely automatic. During the cleaning cycle, the rotating head directs two solid, high pressure liquid jets in a full spherical path. Impact of the jets scrubs entire interior of the tank. The unit, suitable for the paper industry, can be used with both closed and open systems. Addition of detergent or sanitizing agent in preset proportions is possible through the siphoning action of the jet feed unit. — Sellers Injector Corp.

Circle No. 19 on Readers' Service Card



Hot stock screen

An advanced-design model of the hot stock screen has been introduced. Designed for automated hot stock screening service ahead of brown stock washers, it is also being used on washed pulp. Unknotted stock is handled as easily as knotted stock. — Improved Machinery Inc.

Circle No. 20 on Readers' Service Card

Target charts

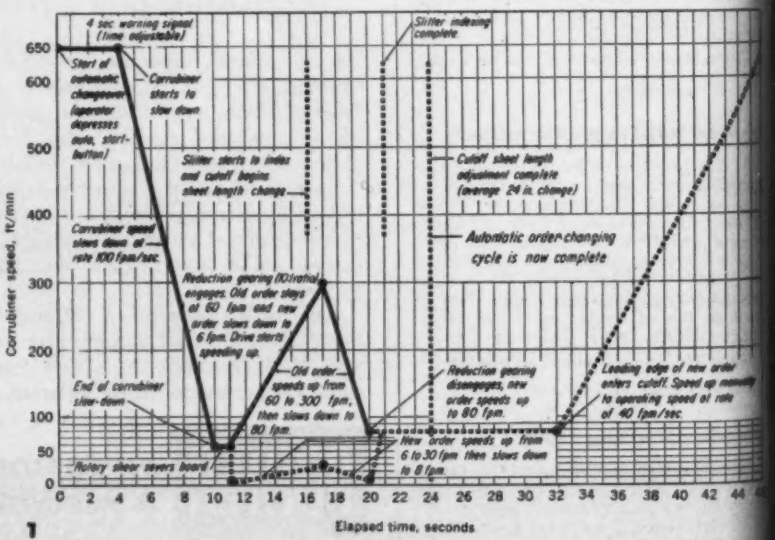
A new line of target charts for graphically plotting data which is goal-directed, is ideally suited for plotting sales performances, production quotas,

Continued on page 562

Order changing system

An automatic order changing system is now available as an integral part of the "700" Corrubiner. The system makes possible rapid changeover from order to order in the machine's final operation of scoring, slitting, and cutting, without shutting down the machines. The entire order change cycle takes 32 seconds. — S & S Corrugated Paper Machinery Co. Inc.

Circle No. 21 on Readers' Service Card


4 sec warning signal (time adjustable)
Slitter indexing complete
Start of automatic changeover (operator depresses auto. start-button)
Corrubiner starts to slow down
Slitter starts to index and cutoff begins sheet length change
Cutoff sheet length adjustment complete (average 24 in. change)
Corrubiner speed slows down at rate 100 fpm/sec
Automatic order-changing cycle is now complete
Reduction gearing (10-ratio) engages. Old order stays at 60 fpm and new order slows down to 6 fpm. Drive starts speeding up.
Old order speeds up from 60 to 300 fpm, then slows down to 80 fpm.
Reduction gearing disengages, new order speeds up to 80 fpm.
Leading edge of new order enters cutoff. Speed up smoothly to operating speed of rate of 40 fpm/sec.
End of corrubiner slow-down
Rotary shear severs board
New order speeds up from 6 to 30 fpm then slows down to 8 fpm.
Corrubiner speed, ft/min
650
600
500
400
300
200
100
50
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44
Elapsed time, seconds

Regular Submersible

Layne

SUBMERSIBLE PUMPS

deliver water

economically

consistently

silently

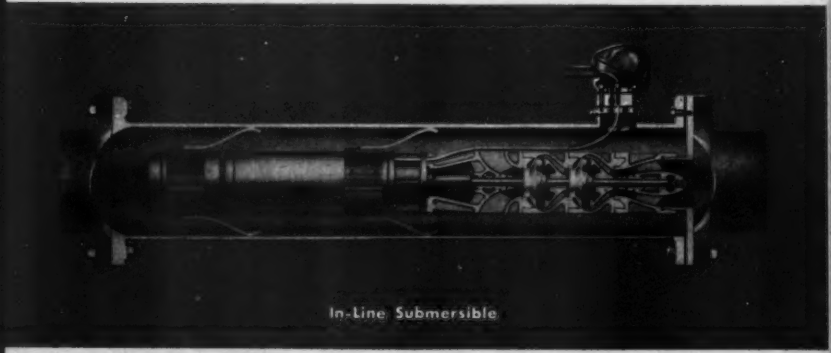
efficiently

The Layne Submersible Pump installation gives you noise free operation because the pump and motor are completely submerged. The Layne Submersible is adaptable to all wells; requires a minimum of space since no pump house is required; eliminates possibility of water contamination; and eliminates the opportunity for vandalism or other accidental mishap or damage.

Layne Submersible Pumps are available for wells as small as 6 inches and in capacities from 30 GPM up. For additional information write for free bulletin number 202.

The Layne In-Line Submersible pump provides the answer to many problems in booster pump applications. The pump operates as an integral part of the line and is designed for use by municipalities, industry, such as petroleum and chemical plants and by agriculture. Advantages include: simple installation, no additional space required, continuous service even under flood conditions, and no possibility of surface water contamination.

Layne In-Line pumps are made as small as 4 inch bowls on a 4 inch motor for use in a 6 inch pipe to deliver 30 GPM. Larger sizes are available as required. For additional information write for free bulletin number 203.



In-Line Submersible

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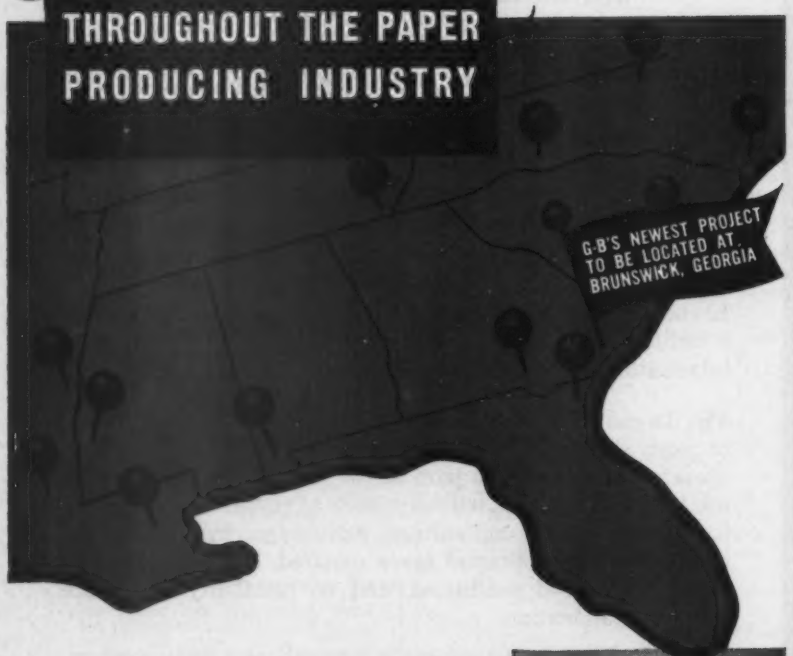
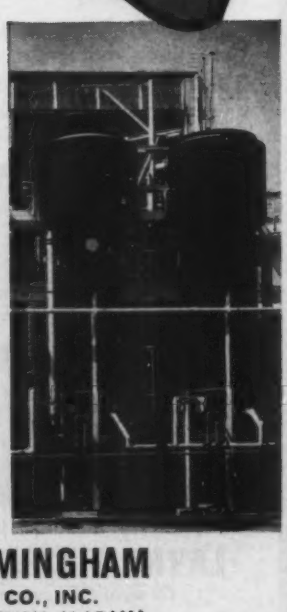
For more data circle 142 on Post Card

BLACK LIQUOR EVAPORATORS STAND OUT

THROUGHOUT THE PAPER PRODUCING INDUSTRY



G-B has been an outstanding supplier of Black Liquor Evaporators to the paper industry since 1934. Many new design innovations and cost cutting techniques can be attributed directly to G-B.



Write, wire or call for brochure #PP 509-1 giving complete details on G-B Black Liquor Evaporators.

GOSLIN-BIRMINGHAM
MANUFACTURING CO., INC.
P. O. BOX 631 BIRMINGHAM, ALABAMA
FILTERS • EVAPORATORS • PROCESS EQUIPMENT • CONTRACT MANUFACTURING including HEAVY CASTINGS

For more data circle 143 on Post Card

NEW PRODUCTS

Continued from page 560

financial figures, and other quantitative data. They are designed to permit the plotting of data weekly, monthly, quarterly, annually or by other suitable time periods. — Compton Chart Productions.

Circle No. 22 on Readers' Service Card

Radiation Pyrometer

The "Kustotherm" is a surface radiation pyrometer for measuring temperature of paper and any other non-metallic sheet materials without contacting the material. It can be used on surfaces of any color, including white, within the limit of permissible error. The range of the instrument is from 125° to 480° F. — E P I C Inc.

Circle No. 23 on Readers' Service Card

Infra-red heaters

A new line of gas fired infra-red heaters for process heating applications are specially designed with burners of small and medium capacity units. Outputs are from 2300 to 16,000 Btu per hr. for use in heating, drying, curing and caking. The burners convert the fuel energy to infra-red radiation by burning gas on the surface of a ceramic mat. Six figurations are available. — Fannon Products Division, Hupp Corp.

Circle No. 24 on Readers' Service Card

Electric tractor

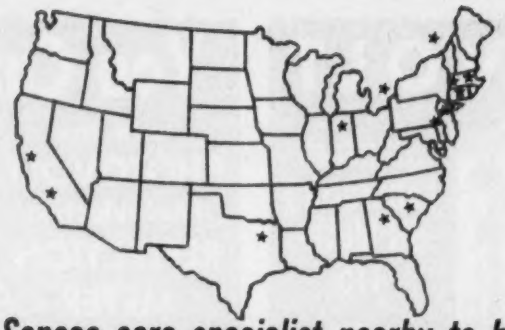
An electric tractor is a combination walkie-rider tractor using low travel speeds for walkie use, and a special high speed when used for rider towing over long distances. It is ideal where both short and long hauls are required. — Barrett Cravens Co.

Circle No. 25 on Readers' Service Card

Shredding machine

This equipment is designed for size reduction of large flat shapes such as sheets and bags of paper as well as corrugated, foils and similar materials. They are recommended for applications

Continued on page 564



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Sonoco paper mill cores are made with or without metal ends in standard and special sizes. Prompt delivery from your nearest Sonoco plant. *Get more for your core dollar from Sonoco.* Call or write *today!*

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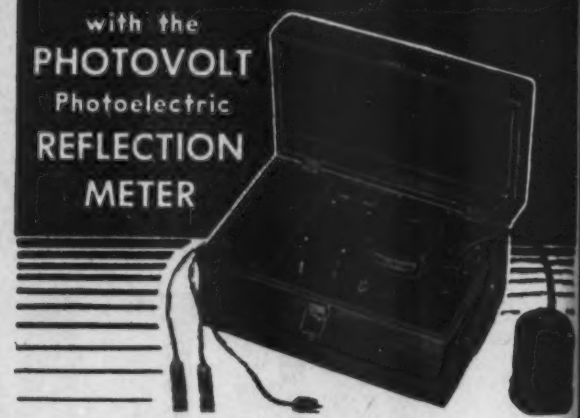

for accurate measurement of
Brightness and Opacity
of pulp and paper in terms of TAPPI specifications.
Also for *Gloss and Color*
tests on paper, card board, and other paper products.
Portable, reliable, rugged, simple to operate
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For more data circle 145 on Post Card

NEW PRODUCTS

Continued from page 562

such as shredding corrugated broke, paper trim and waste preparatory to re-processing, automatic reduction of empty bags, and shredding production waste. The machines handle up to 4 tons per hr. — Industrial Shredder & Cutter Co.

Circle No. 26 on Readers' Service Card

Castable refractory

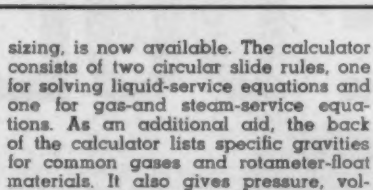
A new high-strength castable refractory has been developed by pneumatic gun placement with low rebound loss and minimum dusting. Placed by wet or dry gun methods, the product is a high strength monolithic body with abrasion resistance and resistance to thermal shock. It has recommended use for temperatures of 2500° F. — Babcock & Wilcox Co.

Circle No. 27 on Readers' Service Card

Circular slide rule

A sizing-factor calculator which provides one-setting solution of the basic temperature-pressure and specific-gravity equations involved in rotameter sizing, is now available. The calculator consists of two circular slide rules, one for solving liquid-service equations and one for gas-and steam-service equations. As an additional aid, the back of the calculator lists specific gravities for common gases and rotameter-float materials. It also gives pressure, volume, weight, area and length conversion tables. — Brooks Instrument Co.

Circle No. 28 on Readers' Service Card



Steam trap

A new float thermostatic steam trap is now available. It is equipped with stainless steel bi-metal thermostatic air vent and shuts tightly on steam to prevent waste. Connections are ¾ in. American Standard pipe threads. Pressure ranges from 0 to 30 psi, 0 to 75 psi and 0 to 150 psi. — Farris Eng. Corp.

Circle No. 29 on Readers' Service Card

Sheet insulation

A new insulation system combines an insulation material with a diamond-rib sheet aluminum facing. It is supplied in sheets about 50 in. wide by 100 in. long designed to provide a net insulation coverage of 4 ft. by 8 ft. when applied with recommended overlap. It is especially effective on outdoor tanks and other locations where weather-resistant facing is required. — Johns-Manville

Circle No. 30 on Readers' Service Card

Pipe fittings

Geon thermoplastic pipe is used extensively for process piping handling hot corrosive liquids, hot water lines and similar application above the temperature range of unplasticized polyvinyl chloride piping. This includes handling strong alkalies and acids and many other corrosive liquids. The pipe and fittings are joined by solvent cemented or threaded joints. — Tube Turns Plastics Inc.

Circle No. 31 on Readers' Service Card

Here's How You Can Train Your Supervisors in...

COMMUNICATION FOR SAFETY

A realistic to-the-point series of 4 films teaches foremen how . . . by showing them how.

Again . . . from the National Safety Council . . . comes another supervisor training series: the all-new COMMUNICATION FOR SAFETY. Here are four films, produced by the same National Safety Council team that has won applause from safety-minded companies across the nation, with: "Safety and the Foreman"; "Supervising For Safety"; "Safety Management For Foremen"; "Speaking of Safety"; and "Human Factors in Safety". Remember — your company's safety program must be carried to your employees mainly by your supervisory personnel. It's up to them to learn the art of communication — not only for safety but to help make their work as supervisors more effective. THE COMMUNICATION FOR SAFETY film series is one way — an economical way—to TEACH THEM HOW BY SHOWING THEM HOW.

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For more data circle 146 on Post Card

NEW LITERATURE

Booklets

DOUGLAS FIR PLYWOOD, a printed edition of Commercial Standard CS45-60, is now available from the Superintendent of Documents, U. S. Government Printing Office. This revision covers grades of Interior type, Exterior type and Overlaid plywood species of Douglas fir and Western Larch. It includes requirements, tests, standard sizes and tolerances, and inspection rules of the industry, and nomenclature and definitions. New material includes requirements and tests for scarfed joints and special constructions.

SIMPLIFIED PRACTIVE RECOMMENDATION R16-53 on softwood lumber, has just published a new list of the 16 organizations certified for grading and grade marking the lumber produced in accordance with this recommendation, in cooperation with the American Lumber Standards Committee. This publication, which specifies the standard sizes, classifications and definitions of softwood lumber, is available from the Superintendent of Documents, U. S. Government Printing Office.

USDA Reports

FLORIDA'S TIMBER, by Robert W. Larson and Marcus H. Goforth, is available from the Southeastern Forest Experiment Station, Asheville, N.C. Forest Survey Release No. 57 studies the changes in timber use, the timber supply outlook and the timber supply itself.

REPORT NO. 8, Control of Black Root Rot of Pine Seedlings by Soil Fumigation in the Nursery, by A. Alfred Foster, is being offered by Georgia Forest Research Council and the Southeastern Forest Experiment Station, Asheville, N.C.

Manufacturers' Publications

Copies of these publications are available at no obligation through our Reader's Service Department. Use the reply card which accompanies this issue when requesting items.

Web guide manual

Stanford Engineering Co. has announced the availability of a new eight-page technical manual with detailed information on the Stanford "P-H" series automatic web guide. The manual, complete with illustrations, contains an introductory to hydraulic web guiding, principle of operation, models available, application, construction and installation instructions.

Circle No. 32 on Readers' Service Card

Latex for paper saturation

National Starch & Chem. Corp. is offering a 17-page bulletin on X-Link Self-crosslinking Copolymer Latex for paper saturation. The bulletin gives general properties, formulation, application, and graphical data.

Circle No. 33 on Readers' Service Card

Sealing guide

Crane Packing Co. is offering a sealing guide which has been especially developed to provide recommendations and information on sealing applications in all phases of pulp and paper mill operation. Contents cover mechanical packing, shaft seals, pipe joint and gasket compounds. A reference guide chart covers all types of equipment. Subsequent sections give illustrated, technical information on everything listed in the chart.

Circle No. 34 on Readers' Service Card

Engineering catalog

Foote Bros. Gear & Machine Corp. is announcing the publication of a new engineering catalog on its line of heavy duty enclosed helical gear drives. The catalog features a simplified selection procedure plus a complete description of various drive accessories and their application.

Circle No. 35 on Readers' Service Card

Closed circuit TV

Fairbanks Morse & Co. is offering a bulletin describing how closed-circuit television can be used for surveillance, transportation and dispatching, cost reduction and quality control, merchandising, security, and observation of hazardous locations. Also described is the Mini-Camera, able to observe the interior of a 3-in. pipe.

Circle No. 36 on Readers' Service Card

Radiant heat

Fostoria Corp. has published an eight-page, two-color brochure explaining the principle of radiant heat. Equipped with drawings, photos and graphs, the text explains mechanical design, controls and economics of the system.

Circle No. 37 on Readers' Service Card

Motors and speed drives

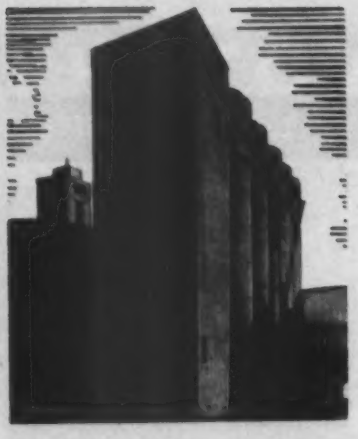
Louis Allis Co. is making available a four-page bulletin featuring the various applications of motors and adjustable speed drives in the paper industry. Included are photos of the machinery in operation.

Circle No. 38 on Readers' Service Card

Temperature transmitter

Foxboro Co. is offering a bulletin on its Type 12A pneumatic temperature transmitter. The 12-page bulletin illustrates installation and adjustment of the transmitter to suit a wide range of application requirements. Also included are detailed specifications, descriptions of operating principle, table of temperature ranges, and data on related accessories.

Circle No. 39 on Readers' Service Card



Save Man Hours

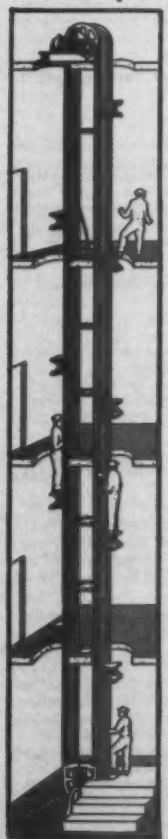
Equip Your Digester House with a

HUMPHREY

Employee's Manlift

ELEVATOR

Eliminate stair climbing — save time — reduce employee fatigue. The endless belt provides continuous up and down transportation to and from sampling and operating floors. Easy and safe to operate with ready-at-hand stop and go controls and the exclusive Humphrey Safety Features.



Can be installed in any Multi-Floor Building

Send us your requirements . . . we'll furnish complete information and prices.

HUMPHREY ELEVATOR COMPANY

Inc.

347 1st Ave. N.W.

Faribault, Minnesota

Humphrey is the original Manlift Elevator, made continuously since 1887.

For more data circle 147 on Post Card

Pressure transmitters

Bailey Meter Co. is offering three illustrated product specification sheets describing the differential pressure transmitters, pneumatic pressure transmitting mechanisms and electrical pressure transmitting mechanisms. All publications list physical characteristics, and include charts and pictures describing various models.

Circle No. 40 on Readers' Service Card

Spray nozzle

Spraying Systems Co. is offering a bulletin which illustrates and describes the complete line of automatic pneumatic atomizing spray nozzles for industrial use. A typical installation is also schematically illustrated and described along with accessory equipment normally used.

Circle No. 41 on Readers' Service Card

Centrifugal pumps

Aurora Pump Division of New York Air Brake Co. is offering an eight-page bulletin which illustrates and describes the complete line of single-stage, double suction, horizontal split case pumps. It also contains sectional photos, selection charts, dimensional data, limitations chart, and engineers specifications.

Circle No. 42 on Readers' Service Card

Sodium hypochlorite control

Bristol Co. is offering a data sheet which defines the problems involved in the manufacture of sodium hypochlorite by both process systems, and graphically illustrates process control instrumentation systems presently employed.

Circle No. 43 on Readers' Service Card

Centriscreen

Bird Machine Co. is offering an eight-page bulletin on centriscreens. This bulletin describes the range of applications on both pulp and paper stocks, and pictures and describes the four sizes of centriscreens including the new Model 18 which has a capacity of up to 10,000 gal.

Circle No. 44 on Readers' Service Card

Lubricant uses

The Lubriplate Division of Fiske Bros. Refining Co. is offering a new four-page brochure on its latest recommendations for the lubrication of various types of machinery and equipment. The brochure outlines in detail the lubricants that are best applicable to various machinery needs.

Circle No. 45 on Readers' Service Card

Chemical resistance of polyester and epoxy resins

Atlas Chemical Industries Inc. presents a report on how three different polyester resins—bisphenol A, isophthalic, and general-purpose, room temperature, heat-cured epoxy withstood immersion for up to one year in various corrosive aqueous solutions at elevated temperatures. The 16-page bulletin titled, A Continuation of the Comparative Study of the Corrosion Resistance of a Bisphenol A Polyester and Various Other Polyester and Epoxy Resins, includes curves showing strength retention of the various resins after immersion. In addition, tables are provided to indicate other specific effects of the corrosive media on the resins.

Circle No. 46 on Readers' Service Card

Safety practices

Mfg. Chemists' Assoc. Inc. is offering an eight-page pamphlet on recommended safe practices and procedures for entering tanks and other enclosed spaces. It emphasizes the hazards inherent in tank entry can be avoided or overcome, and suggest a sample work schedule for employees.

Circle No. 47 on Readers' Service Card

Copolymer

The Chemical Group of the General Aniline & Film Corp. has issued a comprehensive 40-page data bulletin on Gantrez An resin, a water-soluble polyelectrolyte available in several molecular weights. The physicial, chemical and physiological properties of the Gantrez An resin, as well as its industrial applications which include adhesives and coatings and paper, are described in the booklet.

Circle No. 48 on Readers' Service Card

Professional and Business Services

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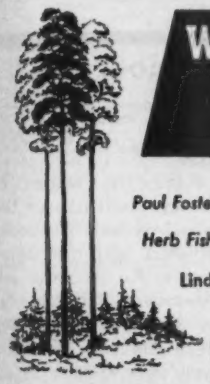

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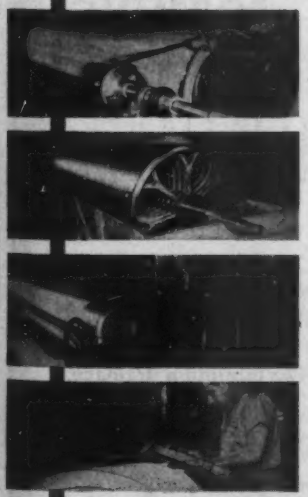

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Man selected will organize and staff a research and development group to evaluate present research data and company products . . . . then follow through with necessary efforts to bring products to marketing stage. Must be able to provide technical assistance to the sales department in latter stages of development.

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NAMES IN THE NEWS

Continued from page 547

the technical department, maintenance, power, electrical and general yard operation. He will report to O'Brien.

George McLennan was named office manager, responsible for purchasing, general services and industrial relations.

Micheal Fetcie was named supervisor of accounting and order processing and, in addition, will be responsible for costs and traffic.

Burt L. Kassing, who has been resident manager since 1957, and L. J. Berryman, general services manager since 1957, will return to the Port Edwards office for staff assignments.

Changes effecting the Potsdam mill are a result of the company's recent placing of the mill on a stand-by basis.

John S. Buchanan has been named superintendent of the Nekoosa kraft mill. He previously was acting superintendent of this mill.

Draper Bros. Co.

Fred Ihlenburg has been appointed assistant sales manager of the Papermakers Felt Division at the home office of the company in Canton, Mass. For the past three years, Ihlenburg has been operating out of the Portland, Ore., office.

Ihlenburg

Landers

Link-Belt Co.

Robert G. Landers has been appointed district manager for the company's sales office in Moline, Ill. The Moline district includes the northwestern portion of Illinois and most of Iowa. Landers has spent the last five years as district sales engineer at Detroit.

Two recent appointments for the company's Philadelphia plant are Harry M. Horton, sales manager, and Alfred B. Schachte Jr., assistant sales manager. John J. Bradley will succeed Horton as district manager at Summit, N.J.

Other appointments were: Leslie J. Carson, director of engineering with headquarters at the executive office in Chicago; Roderick S. Galloway, general manager of the Colmar plant to succeed Carson; John M. Shepard Jr. who becomes general manager of the Atlanta plant and the southeastern division.

NECROLOGY

James C. Kimberly

James C. Kimberly, father of John R. Kimberly, chairman of the board of Kimberly-Clark Corporation was associated with the company for 54 years. He was the son of one of the founders of Kimberly-Clark, and was a vice president and director prior to his retirement in 1945. He has also served as director, president and board chairman of the

Continued on page 570

Newest Development
in Infra-Red
Gas Burners
THE NEW TYPE "K" BURNER
Laboratory and field installations have indicated a higher conversion ratio of fuel input to infra-red than with other commercially available units. A great improvement by an experienced burner manufacturer, permitting higher efficiencies with exceptional flexibility.
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JOSEPH ROBB & COMPANY
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RAGS (Domestic)

New Cotton Cuttings

The following are brokers' and large dealers' average buying prices for sizeable lots in cents per pound f.o.b. New York:

	per cwt	
No. 1 white shirt cuttings	10.00—	10.50
Soft unbleached muslins	13.50—	14.00
Fancy shirt cuttings	2.00—	3.00
No. 1 percales	4.00—	5.00
No. 1 washables	2.00—	2.25
No. 1 light silesias	6.50—	7.00
Light flannelettes	5.50—	6.00
Cottonades	2.25—	2.50
Blue overall cuttings	5.00—	5.50
Blue cheviots	6.75—	7.25
Canton flannels, bleached	9.00—	10.00
Canton flannels, unbleached	10.50—	11.00
Osnaburg cuttings	8.50—	9.00
Underwear cuts, bleached	10.50—	11.00
Underwear cuts, unbleached	10.50—	11.00
Sun tan khaki cuttings	5.00—	5.50

Cotton Rags

The following are prices, cents per pound, paid by dealers and brokers f.o.b. New York.

	per cwt.	
No. 1 roofing (Chicago)	.65—	.70
No. 2 roofing (Chicago)	.55—	.60
Twos and blues, repacked	2.00—	2.25
Thirds and blues, repacked	1.50—	1.75

WASTE PAPER

The following are prices, dollars per net ton, paid by brokers and large dealers for carload quantities of baled stock, f.o.b. cars New York:

No. 1 hard white envelope cuttings	85.00—	90.00
No. 1 hard white shavings	70.00—	75.00
No. 1 soft white shavings	45.00—	50.00
Soft white shavings, uncoated	55.00—	60.00
Fly leaf shavings No. 1	17.00—	22.00
Fly leaf, woody, No. 1	17.00—	20.00
Mixed colored shavings	16.00—	18.00
No. 1 books and magazines	13.00—	15.00
Ledger stock, white, No. 1	40.00—	45.00
Ledger stock colored, No. 1 (Midwest ship)	27.50—	30.00
New manila envelope cuttings (free of groundwood)	50.00—	55.00
New manila envelope cuttings (containing groundwood)	40.00—	45.00
Manila tab cards	55.00—	60.00
Colored tab cards	42.50—	45.00
New northern kraft envelope cuttings	50.00—	55.00
Triple sorted kraft, 100%	30.00—	32.50
No. 1 old kraft	22.50—	
White news cuts, No. 1	40.00—	45.00
No. 1 overissue news	20.00—	22.00
Folded news, special	16.00—	17.00
Folded news, ordinary	14.00—	15.00
Old corrugated boxes	19.00—	20.00
New jute corrugated cuts	19.00—	20.00
Mill wrappers	9.00—	11.00
Boxboard cuttings	6.00—	8.00
No. 1 mixed paper	3.00—	10.00

CHEMICALS

F.o.b. New York City

Alum, ammonium		
Granular, bags, works, cwt.	4.80—	
Lump, drums, works, cwt.	5.55—	
Powdered, drums, works, cwt.	5.70—	
1-Arginine, drums, kilo	60.00—	
Blanc Fixe		
Direct process, bags, c.l., works, ton	160.00—	
L. c. l., ton	170.00—	
Casein, domestic acid precipitated		
30-mesh bags, 10,000-lb. lots or more, shipping point, lb.	.56—	
80-mesh bags, 10,000-lb. lots or more, shipping point, lb.	.64—	
Imported, 30M Argentine, ex-dock, c. l., lb.	.18½—	
30M N.Z. Lactic, ex-dock, c. l., lb.	.25—	
China Clay, domestic dry-ground, airfloat, 99% 325-mesh bags, c.l., Georgia works, ton	11.00—	17.00
300-mesh bags, c.l., Georgia works, ton	13.50—	22.50
Imported, white, lump, bulk, c. l., ex dock Phila, Portland, Me., gross ton	23.00—	35.00
Chlorine, liquid		
Tanks, single units, works, freight equaled, cwt.	3.25—	
Glycerine, refined (CP, USP) 99% drums c. l., delivered lb.	.26⅜—	
Litharge, commercial powdered		
Barrels, c. l., works, freight equaled lb.	.13¼—	
Rosin, gum, c. l., f.o.b. New York, cwt.		
K, M	13.00—	
N	13.05—	
WG	13.15—	
WW	13.25—	
Rosin, wood, c. l., f.o.b., shipping point, cwt.		
K, M	12.00—	12.25
N	12.35—	
WG	12.55—	
WW	12.85—	
Saltcake, domestic, bulk works, 100% Na_2SO_4 basis ton	28.00—	
Soda Ash		
Dense, 58%, paper bags, c.l. works, cwt	1.90—	
Light, 58%, paper bags, c.l. works, cwt	1.85—	
Soda, caustic		
Flake, 76%, drums, c. l. works, freight equalled, cwt	5.20—	
Solid, 76%, drums, c. l. works, cwt.	4.80—	
Sodium Silicate		
40°Be, 1:3.2, turbid, drums, c. l., works, cwt.	1.65—	
52°Be, turbid, 1:2.4, drums, c. l., works, cwt.	2.65—	
Starch		
Pearl, 140-lb. bags, cwt.	6.73—	
Pearl, 100-lb. bags, cwt.	6.58—	
Powdered, 100-lb. paper bags, cwt.	6.78—	
Sulfur, crude		
Bulk, c. l. mine, contract, long ton	23.50—	
Talc		
Domestic, fibrous, N. Y., grd., bags, c. l. works, ton	28.00—	
Canadian, ground, bags, c. l. works, ton	20.00—	35.00
Titanium Pigment		
Calcium-rutile base, regular, bags, c. l., lb.	.09⅜—	
High-tinting, drums, c. l., lb	.14⅜—	
Zinc Oxide Pigment, American process		
Lead-free, bags, c. l. freight allowed, lb	.12½—	
Leaded, 35%, bags, c. l., freight allowed, lb.	.14—	

WOOD PULP

Quotations on domestic and Canadian pulp, dollars per short air-dry ton delivered consuming mills including basic allowances, follow:

Bleached sulfite, No. 1	140.00—
Bleached sulfite, Canadian	140.00—
Unbleached sulfite, Canadian	125.00—
Bleached soda	130.00—135.00
Bleached soda, Canadian	130.00—135.00
Kraft, bleached hardwood	135.00—140.00
Kraft, bleached	145.00—150.00
Kraft, bleached Canadian	150.00—
Kraft, unbleached southern	120.00—
Kraft, unbleached, Far West	125.00—
Kraft, unbleached Canadian eastern	135.00—
Kraft, semi-bleached southern	130.00—

Quotations on imported wood pulp dollars per short air-dry ton on dock American Atlantic ports, follow:

Bleached sulfite Swedish, freight allowed	140.00—
Bleached sulfite, Norwegian, del'd with limited freight allowance	140.00—
Bleached sulfite, Finnish, freight allowed	140.00—
Unbleached sulfite, Swedish, freight allowed	125.00—130.00
Unbleached sulfite, Finnished, freight allowed	125.00—130.00
Kraft, unbleached, Swedish, freight allowed	125.00—
Kraft, unbleached, Finnish, freight allowed	125.00—
Kraft bleached Swedish, Freight allowed	150.00—155.00
Kraft, bleached, Norwegian	150.00—155.00

PAPER

Quotations are mill quotations Chicago

Book Paper (f.o.b. Chicago, c.l. skids per cwt):	
No. 1 enamels	20.80
No. 2 enamels	19.80
Machine-coated, 45- to 100-lb.	15.55— 19.00

Newsprint (contract base price) per ton
Rolls, standard 135.00
Sheets ..... Standard differentials

Knox Felts
KNOX WOOLEN COMPANY
CAMDEN, MAINE
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OVERLY'S INCORPORATED

Box 468 Neenah Wisconsin

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NECROLOGY

Continued from page 568

former Neenah Paper Co. One of his major contributions to the pulp and paper industry was the donation of funds for the construction and perpetual endowment of a library at the Institute of Paper Chemistry, Appleton, Wis.

Martin J. O'Leary

Martin J. O'Leary was technologist in the Paper Section of the National Bureau of Standards, Washington, D.C. O'Leary had served the government for 33 years. The author of 14 scientific publications, he was well known for his research on techniques for manufacturing new types of papers, especially those made entirely from glass fibers. He had received many awards and commendations for superior performance, including the Department of Commerce medal for meritorious service.

Theodore M. Gilbert

Theodore M. Gilbert was president of the Gilbert Co., Menasha, Wis. He joined the company in 1923. He was the grandson of William Gilbert, founder of the company. In the paper industry, Gilbert was a director of The Association of Pulp Consumers and an executive committeeman of the Writing Paper Manufacturers Association.

Herbert A. Kidd

Herbert A. Kidd was vice president and general manager of Georgia Kraft Company at Macon and Rome, Georgia. His 31-year career with Mead included many important assignments in paperboard research, mill management and construction supervision. The kraft mills of Georgia Kraft Co. were built and operated under his guidance.

Theodore W. Dunn

Theodore W. Dunn was chairman of the board and treasurer of the Dunn Paper co.

David F. Lawlor

David F. Lawlor was for many years, a representative of the Asten-Hill Mfg. Co. He served the company in the New England area.

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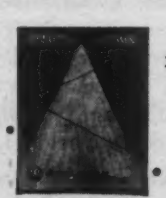

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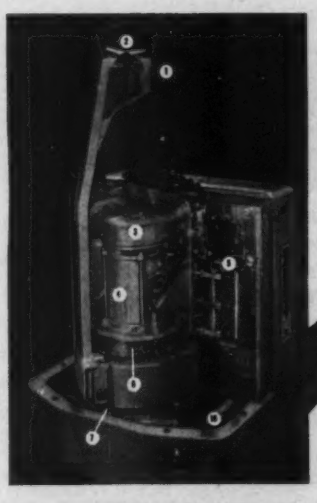

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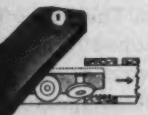

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10. Single-package hydraulic unit

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Here's the first really new concept in walkie pallet trucks in years—Barrett's electric Lo-Lift Model PXG. Look at it carefully—inside and out. Then you see why your best buy is Barrett. For *all* the details, write for new Model PXG Palletox Bulletin No. 587.

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Materials handling equipment *engineered* to your job

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whither? *in production processes new products markets*

Paper house

A house, developed by Parametrics Research & Development, is made of paper honeycomb and corrugated fiberboard and is designed for markets in underdeveloped areas as well as for the vacation house market in America.

A two-bedroom model will sell for less than $1000. Resins are used for impregnating the paper to give it stiffness and make the two-in. thick walls completely weatherproof. Instead of using nails and screws, seams and joints of wall panels are bonded and sealed with a special glass cloth which has a tensile strength of 500 lbs. per inch of width. The house sits on a system of 63 paper tubes staked to the ground and filled with 16,000 lbs. of sand or gravel which provides an anchoring system capable of resisting wind velocities of 125 miles per hour. Each tube can support a weight of 2000 lbs.

Growth control by cyclic lighting

A new lighting method for growth control — cyclic lighting — has been discovered by USDA's Agricultural Research Center, Beltsville, Md., which can save nurserymen up to 95 per cent of electricity costs and increase the number of plant species that will respond to this method.

The method, consisting of short regularly occurring intervals of light application during a 3- to 5-hr. period in the middle of the night, permits the application of a total of only 12 min. of lighting per night instead of the current practice of using 4 hrs. of continuous lighting per night to control plant growth.

Thus, good growth-responses were obtained with a total of 12 min. lighting by using 3 sec. of light every minute for 4 hr., 30 sec. every 10 min. for 4 hr., or 90 sec. every 30 min. for 4 hr. from 10 pm to 2 am. The lighting source was a 75-watt incandescent lamp located 3 ft. above the plant.

Gamma irradiator for grafting studies on cellulosic materials

The Gammacell-220, one of the most intense gamma irradiators in the world, has been installed at the University of Toronto for the primary purpose of research on grafting other polymers onto the cellulose molecule. This research is conducted under the direction of Dr. W. Howard Rapson, head of the department of chemical engineering.

Using the Gammacell, such materials as styrene, methacrylate and acrylonitrile polymers have been grafted onto cellulosic materials, such as cotton textiles, rayon filaments, cellophane, jute fiber, etc. Any vinyl monomer can be grafted onto the cellulose structure, with the possibility of varying the number of sites of attachment and the chain length of the vinyl polymer.

By this procedure, the physical and chemical properties of paper, natural fibers, regenerated cellulose, or cellulose derivatives can be changed from hydrophilic to hydrophobic and vice-versa, from flexible to firm, from dense to bulky.

Improvements can be made in dimensional stability and in resistance to abrasion, temperature, humidity, chemicals, etc., and properties such as tensile strength, elongation, tenacity, etc., can be varied over a wide range.

The pipe turns plastic

Nine out of ten applications in handling corrosive liquids below temperatures of 225°F. can now be met by the use of plastic pipe and fittings, according to David W. Baird of Chemetron Corp. Application of plastic pipe at higher temperature levels, i.e., 300°F. and over, is expected to become possible within a few years.

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